Part 2 of 4

II. DESCRIPTION OF THE PROPOSED PROJECT

C. Describe and furnish plan drawings of all new substations, switching stations, and other ground facilities associated with the proposed project.

Response: This Project will require the construction of new Haymarket Substation to serve expanded Customer load and Dominion Virginia Power customers.

The proposed Haymarket Substation initially will be constructed with four 230 kV circuit breakers in a ring bus configuration, two 230 kV line terminals, two 230-34.5 kV, 84 MVA transformers and nine 34.5 kV circuits. Two 230 kV backbone structures and three shielding structures with shield wire will be installed. The ultimate substation arrangement will consist of the addition of one 230-34.5 kV, 84 MVA transformer and two 34.5 kV circuits to the aforementioned substation equipment.

Additionally, a new control enclosure will be installed to accommodate the communications and protective relays cabinets for the initial and future equipment.

The one-line and general arrangement for the proposed Haymarket Substation are provided as Attachment II.C.1 and Attachment II.C.2, respectively.

At Gainesville Substation, existing 115 kV Line #124, between Gainesville and Loudoun Substations, will be converted to 230 kV operation. Existing 230-115 kV Transformer #2 (TX#2) became an emergency spare following the completion of the Company's Cloverhill-Liberty project in May 2015. The space created by the removal of TX#2 will be used to create the new 230 kV line terminal for the converted Line #124. See Attachments II.C.3 and II.C.4 for the one-line diagram and general arrangement for Gainesville Substation.

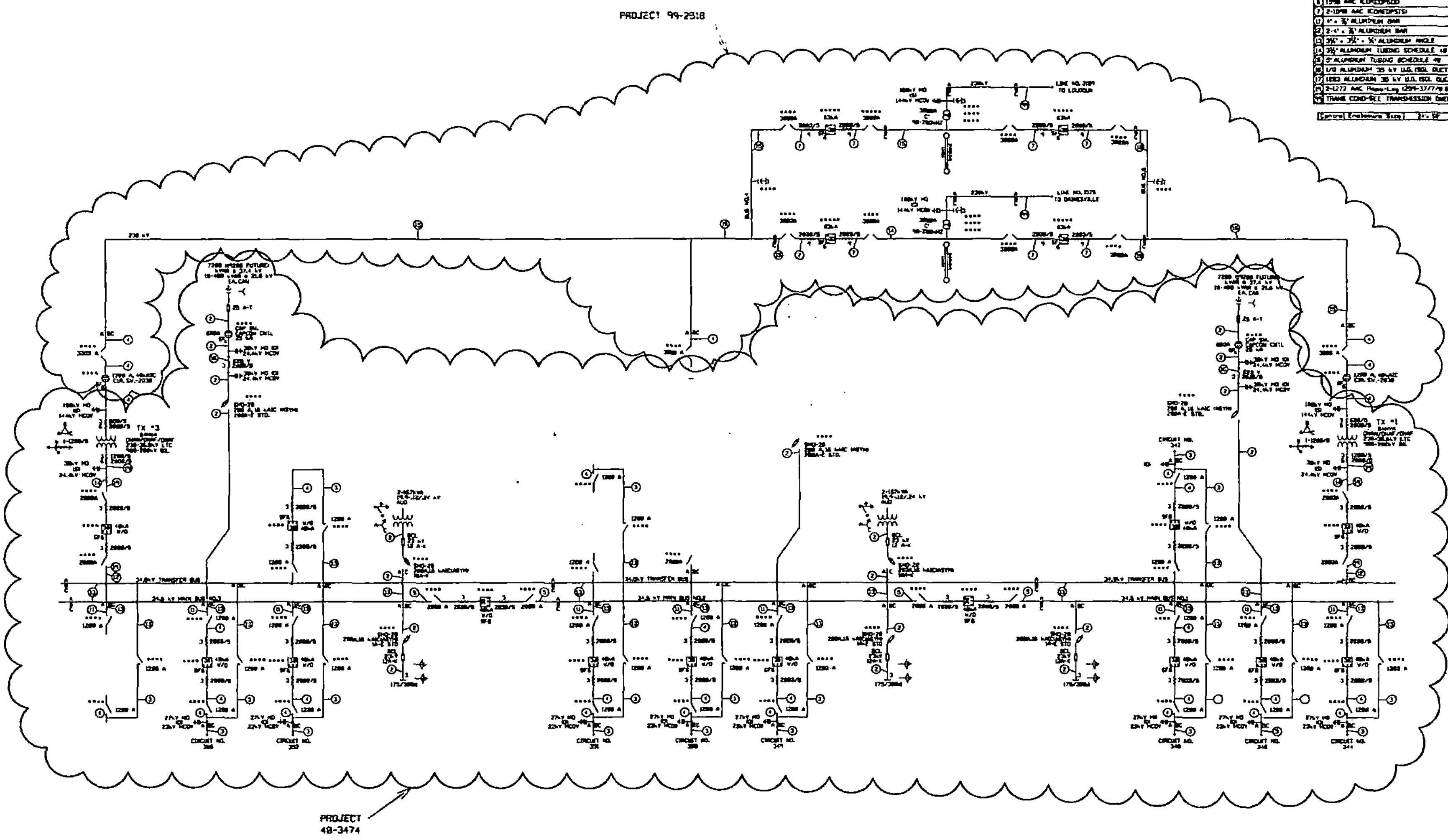
At Loudoun Station, the existing 115 kV straight bus will have been upgraded for the termination of existing 115 kV Line #124 and #156, 115 kV Cap Bank and a tap to the adjacent Mosby Switching Station ("Mosby Station"). The 115 kV bus will be upgraded to meet the Company's clearances for 230 kV operation. Two 230-115 kV transformers are connected to this bus. The proposed Project will remove some of the upgraded 115 kV straight bus and energize it at 230 kV. To reestablish the 115 kV straight bus at Loudoun Station, a new 115 kV rigid bus will be installed to connect Line #156, the 115 kV Cap Bank, the tap for Mosby Station and the two 230-115 kV transformers. The existing equipment associated with the 115 kV Line #124 will be removed, including its associated breaker. Converted Line #124 will terminate at the converted 115 kV bus, now operating at 230 kV. The converted line will be terminated on one vacated side of an existing backbone.

See Attachments II.C.5 and II.C.6 for the one-line diagram and general arrangement for Loudoun Station.

ATTACHMENT II.C.1

SUBSTATION CONDUCTOR SCHEDULE	
NO.	DESCRIPTION
2	4/0 AAC (OXLIP)
3	477 AAC (COSMOS)
4	795 AAC (ARBUTUS)
5	2-795 AAC (ARBUTUS)
6	1590 AAC (COREOPSIS)
7	2-1590 AAC (COREOPSIS)
11	4" x 3/8" ALUMINUM BAR
12	2-4" x 3/8" ALUMINUM BAR
13	3½" x 3½" x 3/8" ALUMINUM ANGLE
14	3½" ALUMINUM TUBING SCHEDULE 40
15	5" ALUMINUM TUBING SCHEDULE 40
16	1/0 ALUMINUM 35 kV U.G. (SGL. DUCT)
17	1000 ALUMINUM 35 kV U.G. (SGL. DUCT)
18	2-1272 AAC Mapo-Lag (2594-37/7/0 87KV)
19	TRANS COND-SEE TRANSMISSION DWG.

Control Enclosure Size: 24' x 52'



PRELIMINARY - NOT FOR CONSTRUCTION

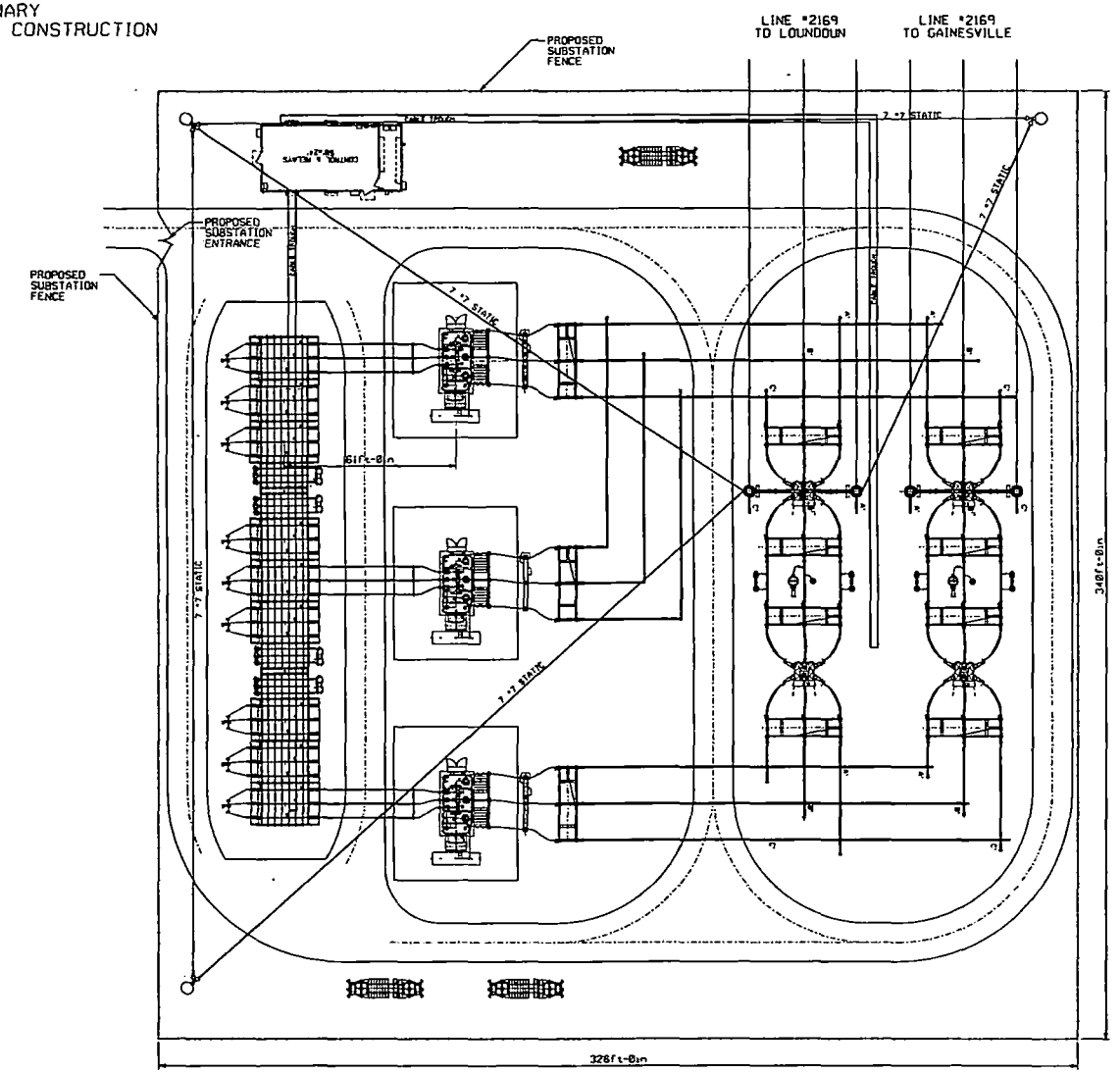
Drawn By: WY	Date 4/1/15
Approval	Date

Dominion
Preliminary One Line Diagram
Substation: HAYMARKET SUBSTATION
Drawing No. ********.DGN

Revisions

1511110207

PRELIMINARY
NOT FOR CONSTRUCTION



PRELIMINARY
NOT FOR CONSTRUCTION

Dominion

PROPOSED GENERAL ARRANGEMENT
HAYMARKET SUBSTATION
-- COUNTY, VIRGINIA

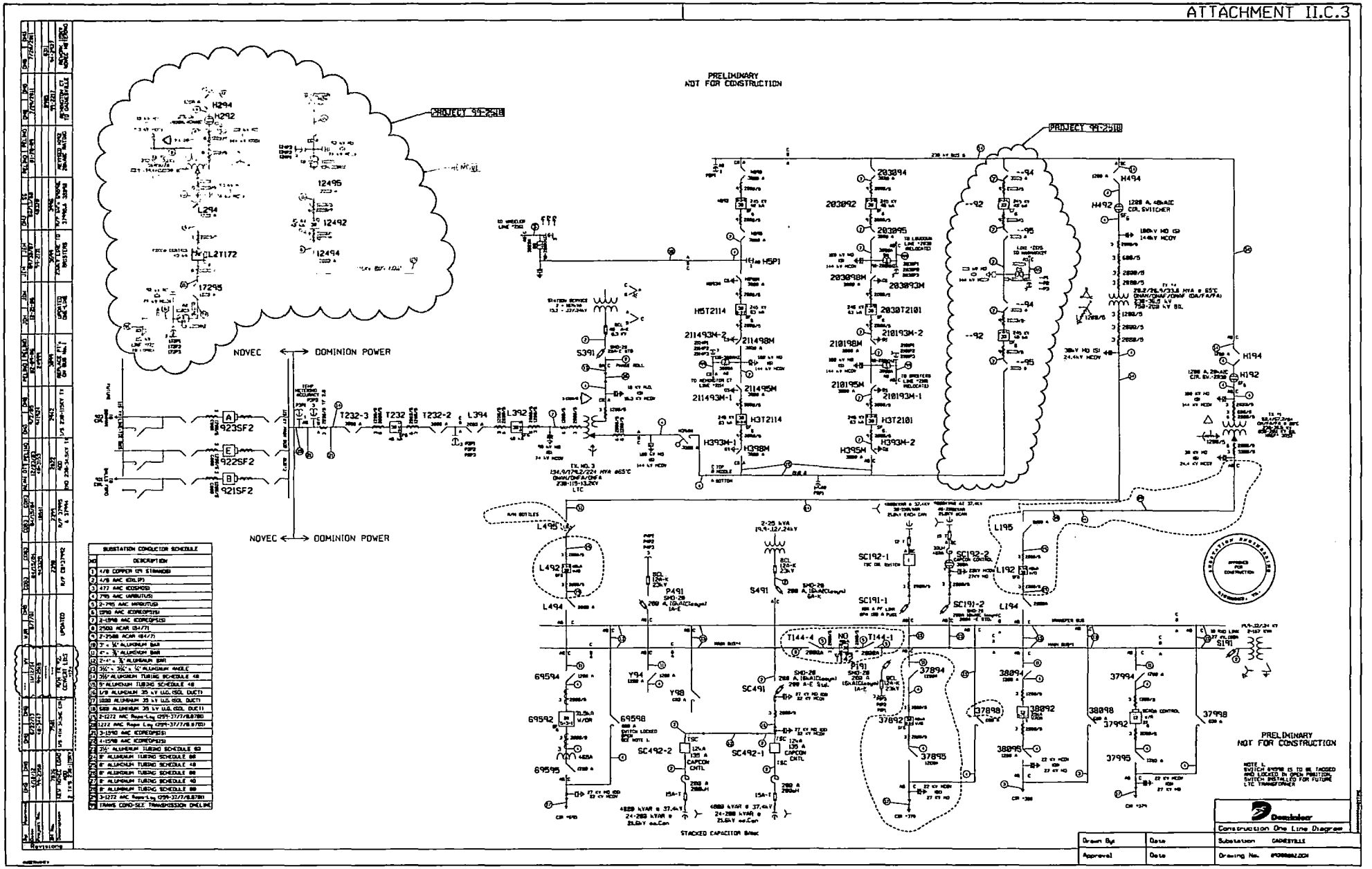
	Name	Date	Project No.	Sheet No.
Designed by:	VV	4/02/15	48-3474	1 of 1
Approved:	VV	--	Scale	
Approved:			1"=30'-0"	
		B/M No.	Revisions	
Cad File Name				
PLOTTED:			Drawing No.	

Revisions

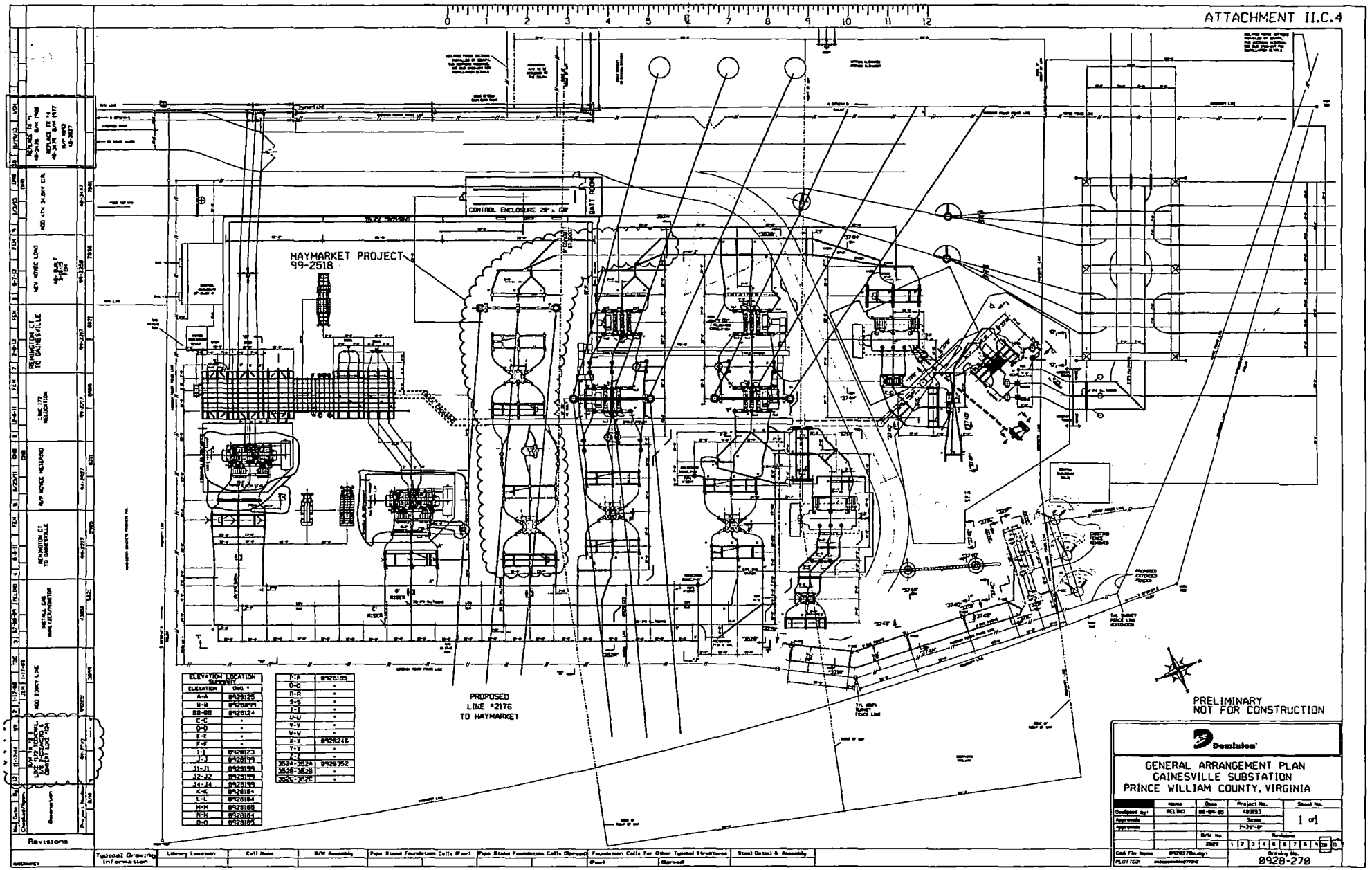
Typical Drawing Information	Library Location	Cell Name	B/M Assembly	Pipe Stand Foundation Cells Plant	Pipe Stand Foundation Cells Spread	Foundation Cells for Other Typical Structures: Plant / Other	Steel Detail & Assembly

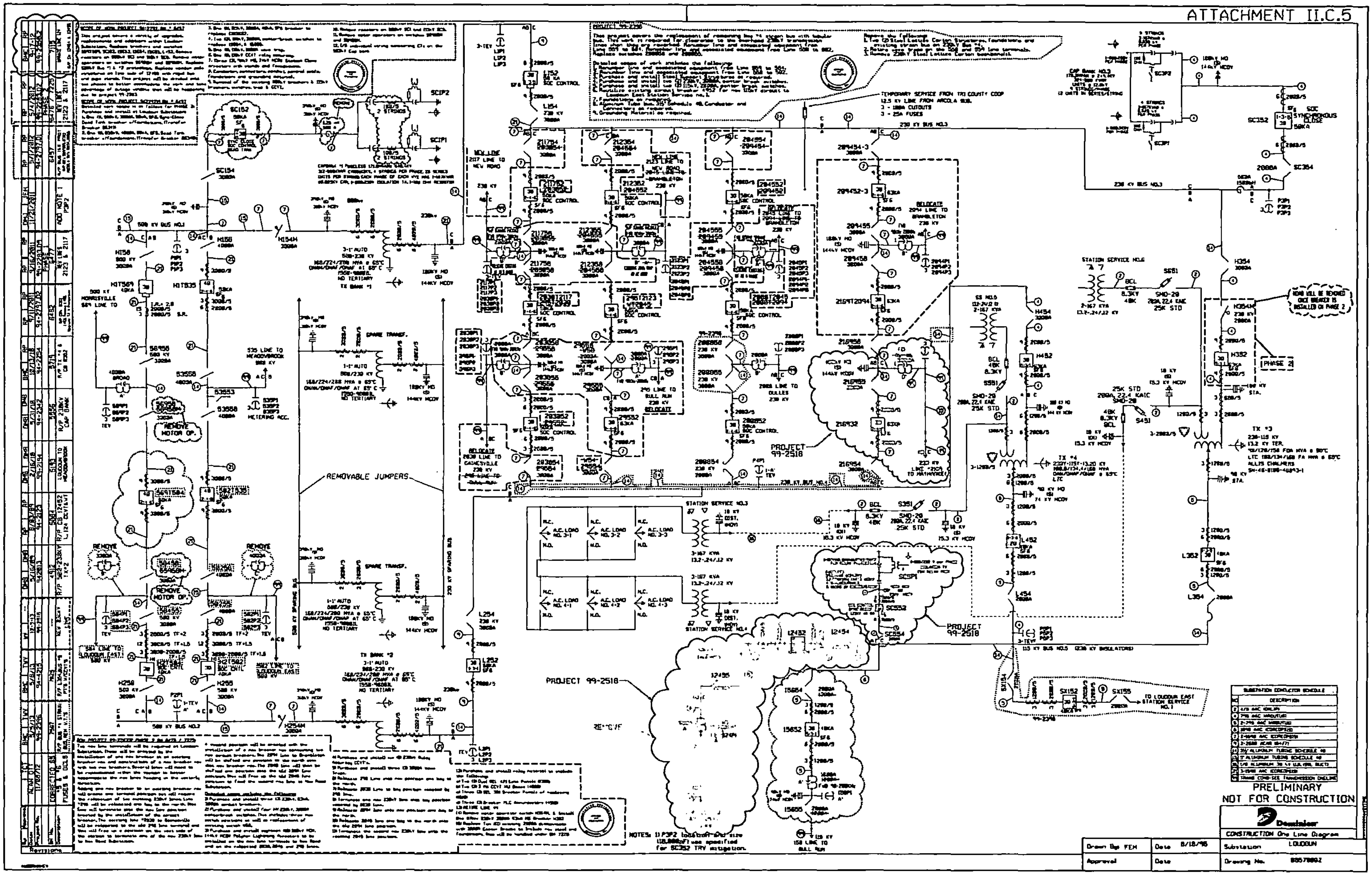
99

15111020?

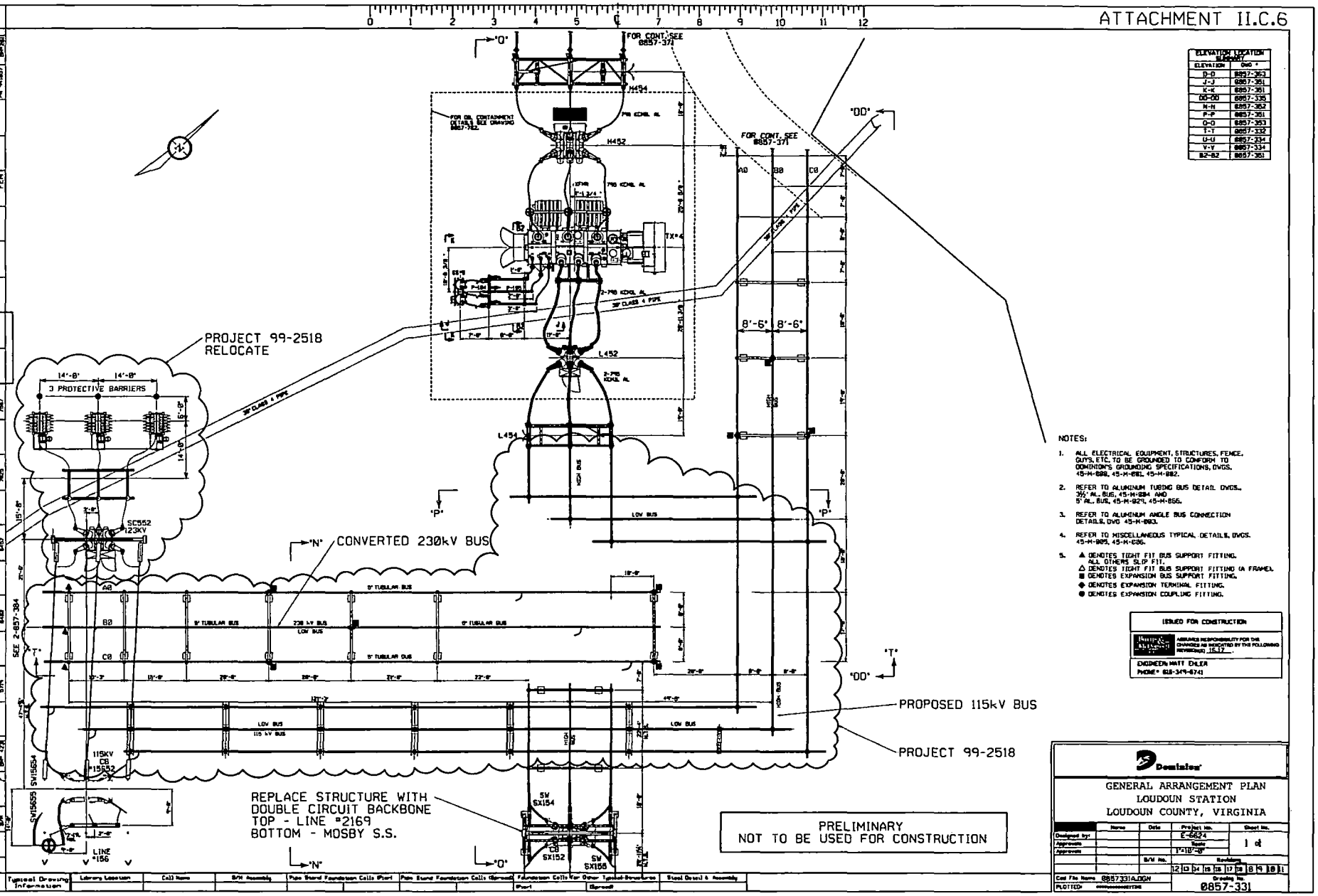

PRELIMINARY
NOT FOR CONSTRUCTION
PROJECT 99-2518
NOVEC
DOMINION POWER
NOVEC
DOMINION POWER
SUBSTATION CONDUCTOR SCHEDULE
DESCRIPTION
4/0 COPPER 12% STRANDED
4/0 ARC (CHLIP)
477 ARC (COSMOS)
795 ARC (ARBUTUS)
2-795 ARC (ARBUTUS)
1590 ARC (CORDOPSIS)
2-1590 ARC (CORDOPSIS)
2500 ACAR (34/7)
2-2500 ACAR (34/7)
3" x 1/2" ALUMINUM BAR
4" x 1/2" ALUMINUM BAR
2-4" x 1/2" ALUMINUM BAR
3/4" x 3/4" x 1/4" ALUMINUM ANGLE
3½" ALUMINUM TUBING SCHEDULE 40
5" ALUMINUM TUBING SCHEDULE 40
1/0 ALUMINUM 35 kV U.G. (SOL. DUCT)
1000 ALUMINUM 35 kV U.G. (SOL. DUCT)
500 ALUMINUM 35 kV U.G. (SOL. DUCT)
2-1272 ARC Rope-Lay (259-37/7/4.8780)
1272 ARC Rope Lay (259-37/7/4.8780)
3-1590 ARC (CORDOPSIS)
4-1590 ARC (CORDOPSIS)
3½" ALUMINUM TUBING SCHEDULE 80
8" ALUMINUM TUBING SCHEDULE 80
6" ALUMINUM TUBING SCHEDULE 40
8" ALUMINUM TUBING SCHEDULE 80
8" ALUMINUM TUBING SCHEDULE 40
8" ALUMINUM TUBING SCHEDULE 80
3-1272 ARC Rope-Lay (259-37/7/4.8780)
TRANS CONO-SEE TRANSMISSION ONELINE
STACKED CAPACITOR BANK
PRELIMINARY
NOT FOR CONSTRUCTION
Dominion
Construction One Line Diagram
Drawn By
Date
Approval
Date
Substation
Drawing No.

ATTACHMENT II.C.4




ATTACHMENT II.C.5
PRELIMINARY
NOT FOR CONSTRUCTION
Dominion
CONSTRUCTION One Line Diagram
Substation LOUDOUN
Drawn By FEH
Date 8/18/95
Approval
Drawing No.
REMOVABLE JUMPERS
PROJECT 99-2518
230 KV BUS NO.3
500 KV BUS NO.1
500 KV BUS NO.2
STATION SERVICE NO.3
STATION SERVICE NO.4
STATION SERVICE NO.6
SPARE TRANSF.
TX BANK #1
TX BANK #2
TX #3
TX #4
PHASE 2
REMOVE
REMOVE MOTOR OP.
TEMPORARY SERVICE FROM TRI COUNTY COOP
115 KV BUS NO.5 (230 KV INSULATORS)
TO LOUDOUN EAST STATION SERVICE NO.1
Revisions

ATTACHMENT II.C.6



III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

A. Describe the character of the area which will be traversed by this line, including, land use, wetlands, etc. Provide the number of dwellings within 500 feet of the line for each route considered.

Response:

<u>Proposed Route:</u>

The Proposed Route would cross 36 privately-owned properties, 1.4 miles of forested land, 3.4 miles of developed land, 0.2 mile of cropland, and less than 0.1 mile of open land. It will cross 5.9 acres of wetlands, with 3.9 acres of those being forested wetlands, and 3.1 miles of battlefield study area, of which 1.0 mile is designated as potential National Register of Historic Places ("NRHP") area and 0.4 mile as battlefield core area. There are 114 single-family homes and 109 townhome/condominium structures within 500 feet of the centerline right-of-way, with 15 single-family homes and 32 townhome/condominium structures being within 200 feet, and 5 single-family homes and 17 townhome/condominium structures located within 100 feet. Although this route impacts a number of residences, as described in the Routing Study, it was selected as the Proposed Route due to its shorter length, greater extent of co-location, minimized impacts on cultural resources, fewer impacts on private lands, and significantly less impacts on forests and wetlands.

<u>Carver Road Alternative Route:</u>

The Carver Road Alternative Route would cross 75 privately-owned properties, 3.8 miles of forested land, 2.8 miles of developed land, 0.1 mile of open land, and less than 0.1 mile of cropland. It will cross 11.5 acres of wetlands, with 8.3 acres of those being forested wetlands, and 4.2 miles of battlefield study area, of which 1.7 miles are designated as potential NRHP area and 0.5 mile as battlefield core area. There are 82 single-family homes, 4 townhome/condominium structures, and 9 apartment buildings within 500 feet of the centerline right-of-way, with 12 single-family homes and 2 apartment buildings being within 200 feet, and 2 single-family homes and 1 apartment building located within 100 feet.

<u>Madison Alternative Route:</u>

The Madison Alternative Route would cross 75 privately-owned properties, 4.4 miles of forested land, 3.4 miles of developed land, 0.3 mile of cropland, and 0.1 mile of open land. It will cross 11.3 acres of wetlands, with 7.8 acres of those being forested wetlands, and 4.9 miles of battlefield study area, of which 2.5 miles are designated as potential NRHP area and 0.5 mile as battlefield core area. There are 99 single-family homes, 4 townhome/condominium structures, and 9 apartment buildings within 500 feet of the centerline right-of-way, with 25 single-

family homes and 2 apartment buildings being within 200 feet, and 3 single-family homes and 1 apartment building within 100 feet.

I-66 Hybrid Alternative Route:

The I-66 Hybrid Alternative Route would cross 35 privately-owned properties, 1.6 miles of forested land, 3.5 miles of developed land, 0.1 mile of cropland, and 0.1 mile of open land. It will cross 5.1 acres of wetlands, with 3.6 acres of those being forested wetlands, and 3.3 miles of battlefield study area, of which 1.1 miles are designated as potential NRHP area and 0.4 mile as battlefield core area. There are 128 single-family homes and 86 townhome/condominium structures within 500 feet of the centerline right-of-way, with 27 single-family homes and 35 townhome/condominium structures being within 200 feet, and 13 single-family homes and 21 townhome/condominium structures within 100 feet.

Railroad Alternative Route:

The Railroad Alternative Route would cross 43 privately-owned properties, 2.9 miles of forested land, 2.6 miles of developed land, 0.1 mile of open land, and 0.1 mile of cropland. It will cross 20.8 acres of wetlands, with 18.9 acres of those being forested wetlands, and 4.2 miles of battlefield study area, of which 1.6 miles are designated as potential NRHP area and 0.7 mile as battlefield core area. There are 47 single-family homes and 28 townhome/condominium structures within 500 feet of the centerline right-of-way, with no single-family homes or townhome/condominium structures within 200 feet.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

B. Advise of any public meetings the Company has had with neighborhood associations and officials of local, state or federal governments who would have an interest or responsibility with respect to affected area or areas.

Response: Beginning in June 2014, Dominion Virginia Power representatives met or spoke with a number of local, state, and federal officials to inform them of this Project in Virginia, including:

- June 11, 2014, meeting with the Town of Haymarket Town Manager, Brian Henshaw.
- June 24, 2014, meeting with Prince William County officials, including County Executive Melissa Peacor and Deputy County Executive Susan Roltsch, among others.

Subsequently, Company representatives met with a variety of Prince William County and Town of Haymarket officials on numerous occasions through the second half of 2014 and 2015 to discuss the Project, provide updates as to the progress of the Company's routing study and any other developments in the Company's planning. Officials included Prince William County Chairman, Corey Stewart; Prince William County Supervisor, Pete Candland; Prince William County Supervisor, Jeanine Lawson; Prince William County Executive Director of Economic Development, Jeffrey Kaczmarek; Town of Haymarket Mayor, David Leake; and Town of Haymarket Councilmember, Joe Pasanello. In addition, as one route option initially studied traversed through Fauquier County, Company representatives discussed the Project with Fauquier County Supervisor, Holder Trumbo, and Fauquier County Planning Commission Vice Chairperson Scott District, Adrienne Garreau. Meetings or presentations included:

- Seven presentations to the Town of Haymarket Town Council and/or Town of Haymarket Planning Commission, including, but not limited to:
    - August 25, 2014, Haymarket Town Council presentation
    - September 1 and 2, 2014, Haymarket Town Council and Planning Commission presentation
    - October 22, 2014, meeting with Haymarket Mayor David Leake and Councilmember Joe Passanello
    - March 30, 2015, Haymarket Town Council presentation

- At least 13 individual or group in-person meetings and/or phone conversations with Prince William County representatives, including, but not limited to:

    - June 24, 2014, Gainesville Supervisor, Pete Candland
    - July 23, 2014, Laurie Cronin, Aide to Chairman Corey Stewart
    - August 6, 2014, Prince William County Planning Commission Chair, Austin Haynes, and Gainesville Commissioner, Fran Arnold
    - September 9, 2014, Prince William County Chairman, Corey Stewart
    - December 2, 2014, Comments before the Prince William Board of County Supervisors Meeting
    - December 8, 2014, County Executive, Melissa Peacor; Deputy County Executive, Susan Roltsch; Economic Development Director, Jeff Kaczmarek; and Planning Director, Chris Price
    - February 11, 2015, Chairman, Corey Stewart (and staff), Deputy County Executive, Susan Roltsch; Planning Director, Chris Price; and Economic Development Director, Jeff Kaczmarek
    - February 20, 2015, Gainesville Supervisor, Pete Candland
    - June 24, 2015, individual project updates included Chairman, Corey Stewart; Gainesville Supervisor, Pete Candland; Brentsville Supervisor, Jeanine Lawson; and Deputy County Executive, Susan Roltsch
    - September 25, 2015, Chairman, Corey Stewart

In addition to local and county outreach, the Company discussed the Project on multiple occasions with state and federal representatives including Delegate Bob Marshall, Delegate David Ramadan, Delegate Tim Hugo, Senator Richard "Dick" Black, Senator Richard Stuart, U.S. Representative Barbra Comstock, U.S. Representative Bob Wittman, U.S. Senator Mark Warner and U.S. Senator Tim Kaine.

Community Outreach

On July 31, 2014, the Company publicly announced the Project via letters to property owners inviting the community to a public informational open house.

The first open house was held on September 10, 2014, at Battlefield High School, 15000 Graduation Drive, Haymarket, Virginia. The purpose of the

open house was to provide an opportunity for the public to talk with Company subject matter experts regarding project details, in particular the specifics of the routing options under consideration.

Approximately 250 people attended. Letters were sent to approximately 475 area property owners, including owners of property within 500' of the proposed centerline for the initial route being considered. The mailing included a Project fact sheet with a map and details regarding the Project. A follow-up reminder postcard was also mailed in August 2014, three weeks prior to the open house date.

An advertisement for the September 2014 open house was run in the following papers on the dates listed below:

- Prince William/Gainesville Times (weekly publication – circulation: 48,401)
  August 27, 2014, September 3, 2014
- Prince William Today (weekly publication – circulation: 27,000)
  August 22, 2014, August 29, 2014, September 5, 2014
- Bull Run Observer (weekly publication – circulation: 49,600)
  August 22, 2014, September 5, 2014

See Attachment III.B.1 for the mailing to property owners and Attachment III.B.2 for the newspaper advertisement.

On June 24, 2015, the Company sent letters to property owners inviting the community to a second public informational open house.

The open house was held on July 15, 2015, at Battlefield High School, 15000 Graduation Drive, Haymarket, Virginia. The purpose of the open house was to provide an opportunity for the public to talk with Company subject matter experts regarding Project details, in particular the specifics of the routing options under consideration. Additionally, the Company wanted to demonstrate the progress of its routing study since receiving community feedback.

Approximately 555 people attended. Letters were sent to approximately 5,500 area property owners, including owners of property within 1000' of the proposed centerline for each of the studied route options. The mailing included a letter and map that provided an overview of the project since the previous open house in September 2014.

An advertisement for the July 2015 open house was run in the following papers on the dates listed below:

- Prince William/Gainesville Times (weekly publication – circulation: 48,401)

July 1, 2015, July 8, 2015

- Prince William Today (weekly publication – circulation: 27,000)
  July 3, 2015, July 10, 2015
- Haymarketbeat.com (online publication)
  July 1, 2015 through July 14, 2015
- Potomaclocal.com (online publication)
  July 1, 2015 through July 14, 2015
- Washington Post – Prince William Local Living (weekly publication – circulation: 21,225)
  July 2, 2015, July 9, 2015

See Attachment III.B.3 for the mailing to property owners and Attachment III.B.4 for the newspaper advertisement.

In addition to the two public open house events, the Company met with affected HOA and individual property owners, as well as provided periodic updates via email communications to a distribution list of more than 350 email addresses. Some key meetings with stakeholders included:

- Beginning in July 2014 and on a frequent basis, communicated with Somerset Crossing HOA including a meeting on October 15, 2014 that included Town of Haymarket officials
- August 26, 2014, Town Hall Meeting with Green Hill Crossings HOA and other members of the community
- November 25, 2014, presented to the Prince William County Chamber of Commerce
- January 12, 2015, attended Delegate Bob Marshall and Senator Richard Black's Town Hall Meeting regarding the Project
- Multiple communications with the Coalition to Protect Prince William County (a coalition of community members formed during the Company's public engagement)
- Individual conversations with Prince William County Historical Commission, Piedmont Environmental Council, Piedmont HOA, Heritage Hunt HOA, Buckland Preservation Society, Villages of Piedmont developer, Village Place HOA
- Multiple individual meetings with businesses included, but were not limited to, Cedar Mountain Stone, Silver Companies, Lerner Enterprises, Hard Rock Concrete, Haymarket Self Storage

The Company has actively engaged local, state and federal officials and community representatives for more than a year on the Project, and has received hundreds of emails and letters, as well as more than 770 signed petitions.

Also, in accordance with Va. Code § 15.2-2202 D, a letter dated October 5, 2015 (contained as Attachment III.B.5) was delivered to Prince William

County Executive, Ms. Melissa Peacor, Town of Haymarket Town Manager, Brian Henshaw, and Loudoun County Administrator, Mr. Tim Hemstreet, advising of the Company's intention to file this application and inviting the County to consult with the Company about the Project.

Additional information is provided to the public through a website dedicated to the Project:

https://www.dom.com/corporate/what-we-do/electricity/transmission-lines-and-projects/haymarket-230kv-line-and-substation-project

The website includes route maps, an explanation of need, a description of the Project and its benefits, information on the Commission review process, structure diagrams and answers to frequently asked questions. The letter and the factsheet advised readers to visit www.dom.com and enter the search word "Haymarket" for more information regarding the Project.

Attachment III.B.1

151110207

Dominion

Dominion Virginia Power
P.O. Box 26666
Richmond, VA 23261

dom.com

July 31, 2014

RE: **Open House**: Dominion Virginia Power Plans to Add New Electric Transmission Facilities

Dear Neighbor,

You are invited to attend our upcoming Open House to learn more about and provide input on a recently announced project in your area, which includes a new 230kV transmission line and substation.

The rapid growth in the Gainesville/Haymarket areas, including the successful economic development efforts of Prince William County, has resulted in electrical loads that are projected to exceed the capabilities of the electric infrastructure currently in place. The forecasted power increase over the next few years will eventually strain the system, causing issues for the community. Since we can predict this risk, we can take steps now to alleviate any issues from occurring while meeting the immediate needs of the high tech business expansion taking place.

A new 230 kilovolt (kV) double circuit transmission line, approximately six miles long, will need to be constructed, using existing transportation corridors where possible and requiring some new right-of-way. The proposed line would extend from an existing 230 kV transmission line located near Route 66 and Prince William Parkway, through Prince William County and the southern portion of Haymarket to a new substation facility to be located west of Route 15. Please refer to the enclosed fact sheet for additional information.

Community input is an important part of our project planning and development. We hope you can join us at the Open House to learn more about this project and speak directly with the many subject matter experts who will be available.

Open House
September 10
5:00 – 7:30 p.m.
Battlefield High School
15000 Graduation Drive
Haymarket, Virginia 20169

In the meantime, please visit www.dom.com, keyword: *Haymarket* to learn more. You may also contact us by sending an email to powerline@dom.com or calling 1-888-291-0190, Monday – Friday, 7:00 a.m. to 5:00 p.m. I hope to see you at the Open House.

Sincerely,

Carla Y. Picard

Carla Y. Picard
Electric Transmission Project Communications Manager

Enclosures

HAYMARKET
230 kV TRANSMISSION LINE AND SUBSTATION

Dominion Virginia Power is planning to add facilities to meet the growing demand for electricity in Prince William County.

Rapid growth in electrical demand, particularly in the commercial/high-tech sector in the Haymarket area, has resulted in the need to build a new substation and associated transmission facilities in western Prince William County and southern portions of Haymarket.

A new 230 kilovolt (kV) double circuit transmission line, approximately six miles long, will need to be constructed using existing transportation corridors where possible and requiring new right-of-way. The new line will connect into the existing Gainesville to Loudoun transmission line and extend to a new substation west of the Haymarket town limits (see map on reverse). This new transmission infrastructure addresses forecasted increases in energy demand that exceed the capabilities of our current distribution system beginning in 2017.

Dominion's project will:

- provide needed capacity to serve the rapid commercial/high tech sector growth in the area
- help strengthen the electrical grid and improve overall reliability for the community, and
- enable continued economic development in the area

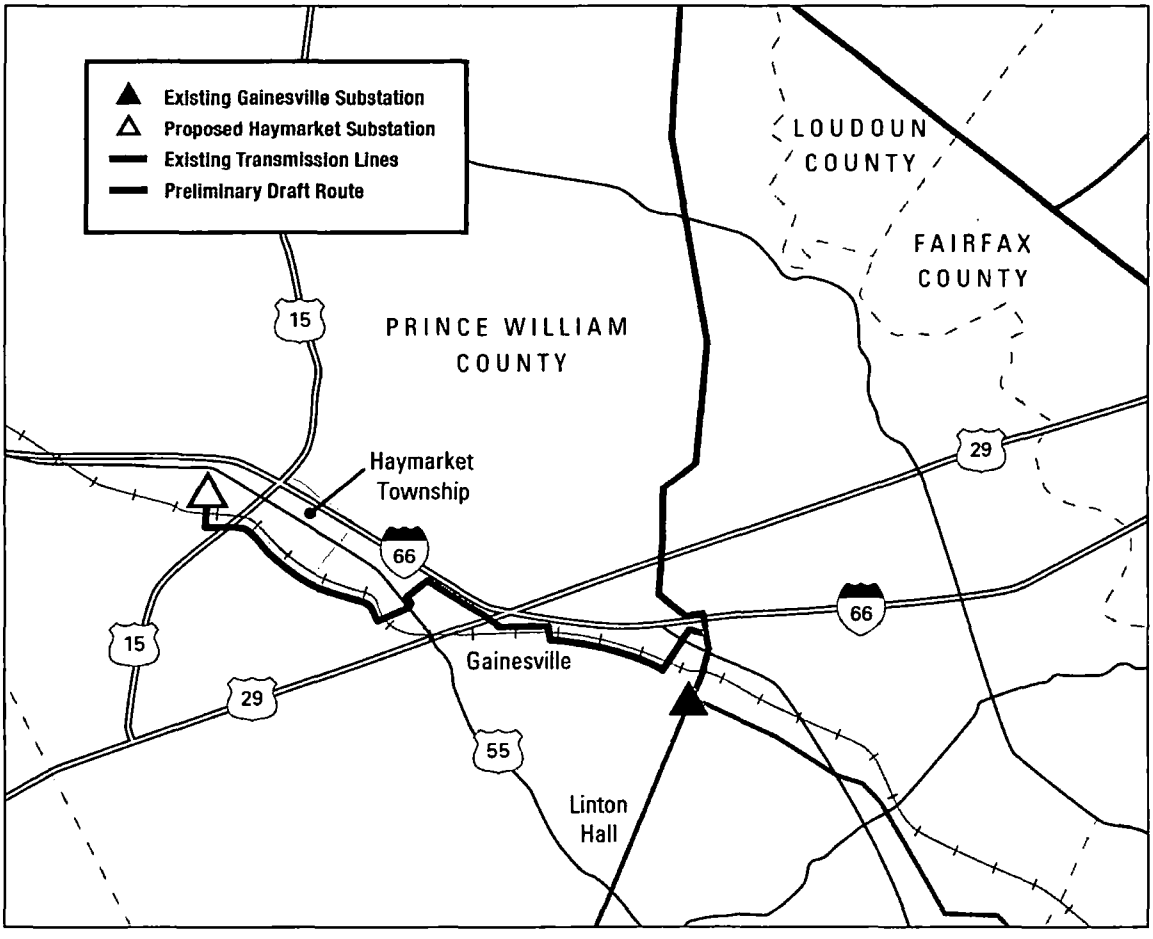
Dominion will also be reinforcing the existing distribution system to help meet the immediate demand for electricity. The new substation, to be built on a shared commercial property, will accommodate future area growth. The combined efforts will provide Dominion, and eventually NOVEC, additional capacity to support continued economic development and improved reliability for the area.

Dominion will seek community input regarding routing options. Outreach will include letters to neighboring property owners, newspaper ads and public meetings.

Preliminary Schedule

Summer/Fall 2014	Community Outreach; letters, newspaper ads and public open house and finalize proposed route
Fall 2014	Submit application to the Virginia State Corporation Commission for consideration
Early 2016	Begin preliminary construction work – forestry, right-of-way clearing *(pending necessary approvals)*
Spring 2017	Energize line and substation

HAYMARKET
230 kV TRANSMISSION LINE AND SUBSTATION



For more information, please visit our website at www.dom.com, keyword: *Haymarket*
Contact our dedicated transmission team by sending an email to powerline@dom.com, or call 1-888-291-0190, Monday through Friday, 7am to 5pm.

Dominion®

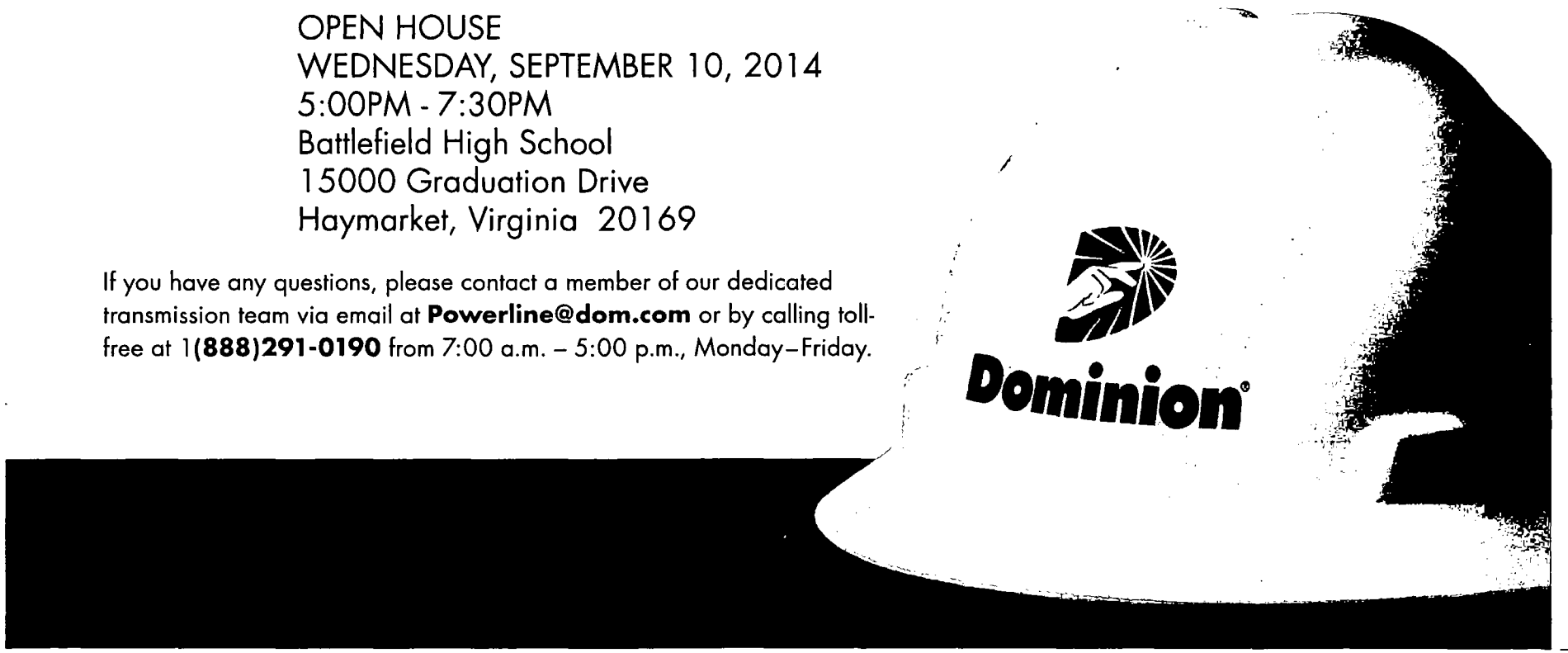
Informational Open House

Haymarket Project

Dominion has been working to identify options for a new 230 kilovolt transmission line to serve a new, local substation that will support economic development and improve reliability for the community. We want to share our plans and hear your views prior to developing our project application for the SCC. Stop by our open house event to learn more about what this project will mean for you and your community. We welcome your input.

OPEN HOUSE
WEDNESDAY, SEPTEMBER 10, 2014
5:00PM - 7:30PM
Battlefield High School
15000 Graduation Drive
Haymarket, Virginia 20169

If you have any questions, please contact a member of our dedicated transmission team via email at **Powerline@dom.com** or by calling toll-free at 1**(888)291-0190** from 7:00 a.m. – 5:00 p.m., Monday–Friday.



Dominion®

Dominion Virginia Power
P.O. Box 26666
Richmond, VA 23261

Open House Event

Dominion®

INFORMATIONAL OPEN HOUSE

Haymarket Project

Dominion is seeking input on a new electric transmission project to serve Prince William County

Dominion Virginia Power is committed to providing safe and reliable service to customers. As the demand for electricity is growing rapidly in the area, it has become necessary for Dominion to add facilities that transport and deliver power to local homes and businesses.

Dominion has been working to identify options for a new 230 kilovolt transmission line to serve a new, local substation that will support economic development and improve reliability for the community. To do this, Dominion must file an application with the Virginia State Corporation Commission.

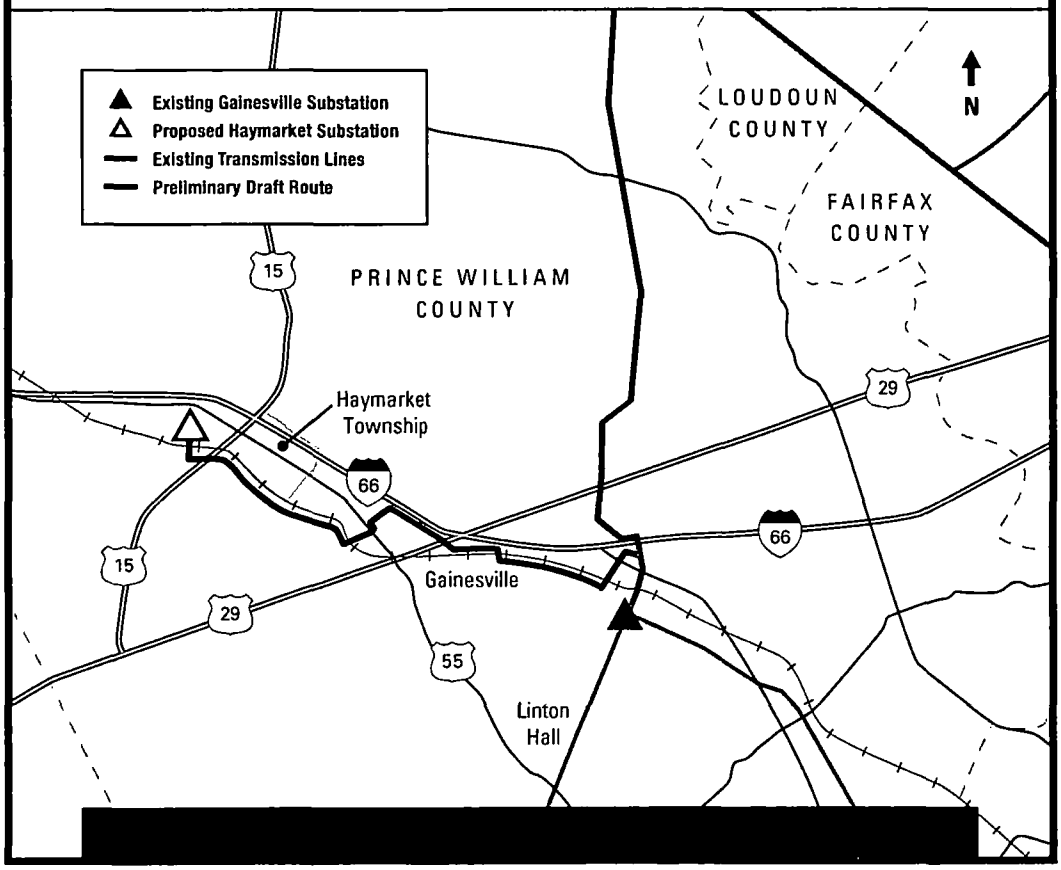
We want to share our plans and hear your views prior to developing the project application. Stop by our open house event to learn more about what this project will mean for you and your community. We welcome your ideas.

*For more information regarding the Haymarket project, please visit our website at **www.dom.com**, keyword: **Haymarket**. Or call **888-291-0190** Monday - Friday, 7:00 a.m. - 5:00 p.m. For routine business or reporting an outage, please call **1-866-DOM-HELP** (1-866-366-4357).*

OPEN HOUSE

WEDNESDAY, SEPTEMBER 10, 2014
5:00 to 7:30 p.m.

Battlefield High School
15000 Graduation Drive
Haymarket, Virginia 20169



Attachment III.B.3

Dominion

Dominion Virginia Power
P O. Box 26666
Richmond. VA 23261
dom.com

15111020?

June 24, 2015

RE: Dominion Virginia Power Haymarket 230kV Transmission and Substation Project

Dear Neighbor,

As you may be aware, Dominion is planning a new electric transmission project in your area, which includes a new 230kV transmission line and substation. This project will support a new high-tech sector business expansion proposed in the Western Prince William area which is projected to exceed the capabilities of our electric distribution system. This means additional capacity at electric transmission-level voltage is required to address the forecasted increase in power demand. We are holding an information session to discuss the project and the route options we are now evaluating.

Wednesday, July 15, 2015, from 5 to 8 p.m.
Battlefield High School, Open Area Cafeteria
15000 Graduation Dr., Haymarket, VA 20169

Routing Study Update
Dominion considers a number of factors when studying options for routing new electric transmission lines. We evaluate a route's constructability and operability while carefully weighing potential impacts on the community, historic assets and the environment. The routing for this project, as with all projects but especially where new right of way is needed, is a sensitive undertaking and not taken lightly. Ultimately, the Virginia State Corporation Commission (SCC) determines the final route alignment.

We understand the community's interest in the "hybrid" overhead/underground option along I-66. While this option will be included in our application, the SCC will not accept this as the only solution. It is important that we study and present various alternatives in order to have a complete application for the SCC to consider, which must include a proposed route, as well as constructible alternative(s). The Company strives in all of its applications to propose the project that addresses the identified need and reasonably minimizes impacts.

The routes currently under consideration are:

1) I-66 "Hybrid" Overhead/Underground Alternative *(light blue line on enclosed map)*
2) I-66 Overhead Alternative *(dark blue line on enclosed map)*
3) Railroad Alternative *(red line on enclosed map)*
4) Carver Road Alternative *(green line on enclosed map)*
5) Madison Alternative *(orange line on enclosed map)*

The route alternatives we have studied and will recommend the SCC not to consider are:

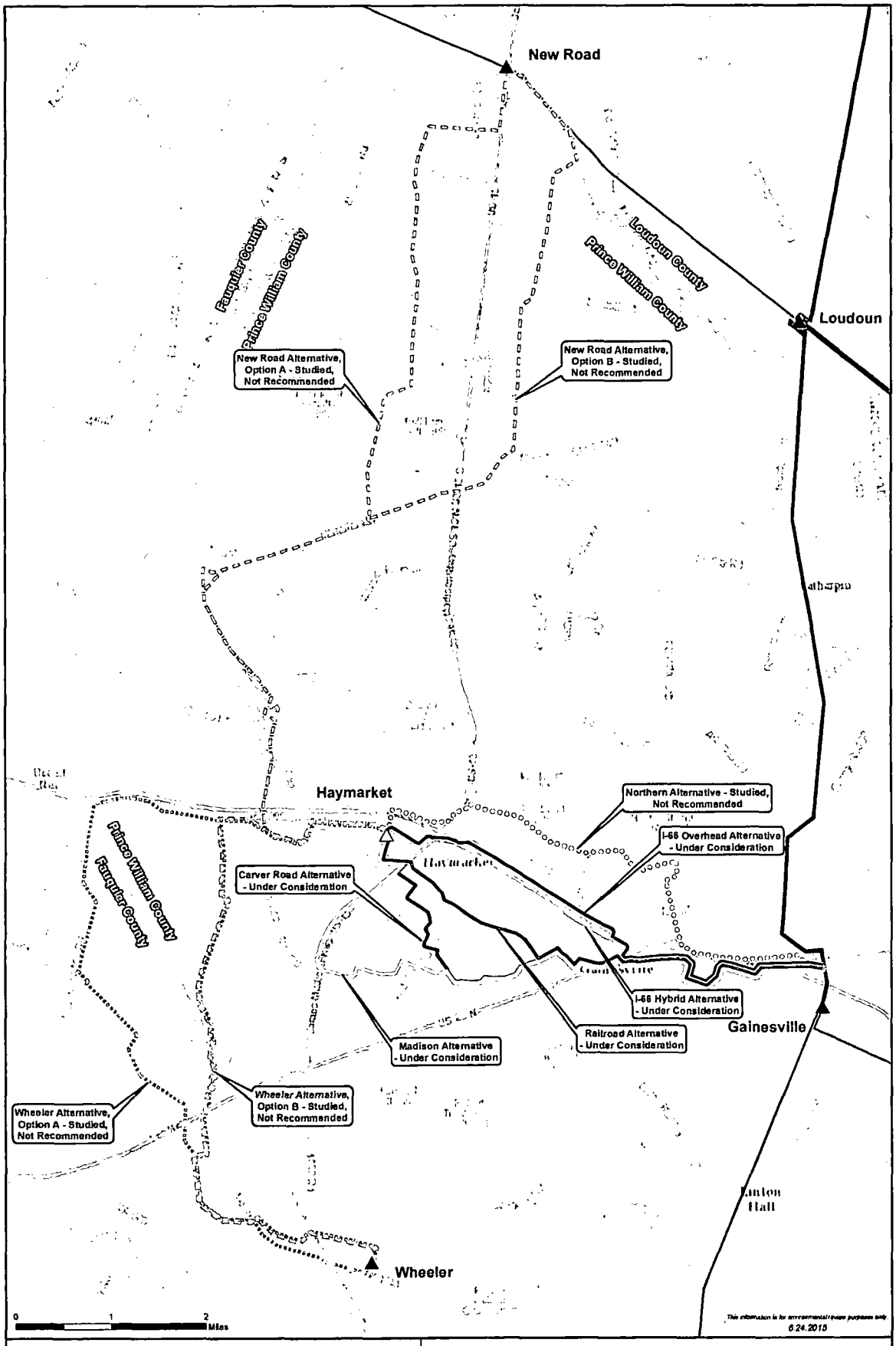
1) New Road Alternatives *(gray long dashes on enclosed map)*
2) Wheeler Alternatives *(gray short dashes on enclosed map)*
3) Northern Alternative *(gray dots on enclosed map)*

Community input continues to be an important part of our project planning and development. We appreciate the community engagement and patience over the last several months and look forward to continuing to share information.

In the meantime, please visit www.dom.com, keyword: *Haymarket* to learn more. You may also contact us by sending an email to powerline@dom.com or calling 1-888-291-0190, Monday – Friday, 7:00a.m. to 5:00p.m.

Sincerely,

Greg Mathe, Manager, Electric Transmission Communications


New Road
Loudoun
Fauquier County
Prince William County
Loudoun County
Prince William County
New Road Alternative, Option A - Studied, Not Recommended
New Road Alternative, Option B - Studied, Not Recommended
Haymarket
Northern Alternative - Studied, Not Recommended
I-66 Overhead Alternative - Under Consideration
Carver Road Alternative - Under Consideration
Prince William County
Fauquier County
I-66 Hybrid Alternative - Under Consideration
Gainesville
Railroad Alternative - Under Consideration
Madison Alternative - Under Consideration
Wheeler Alternative, Option B - Studied, Not Recommended
Wheeler Alternative, Option A - Studied, Not Recommended
Union Hall
Wheeler
0
1
2
Miles
This information is for environmental review purposes only.
6.24.2015
Under Consideration
Carver Road Alternative
I-66 Hybrid Alternative
I-66 Overhead Alternative
Madison Alternative
Railroad Alternative
Studied, Not Recommended
Northern Alternative
New Road Alternative, Option A
New Road Alternative, Option B
Wheeler Alternative, Option A
Wheeler Alternative, Option B
Existing Dominion Transmission Line
Existing Substation
Proposed Haymarket Substation
1:60,000
N
Studied Route Alternatives
Haymarket 230kV Transmission Line and Substation Project
DRAFT - Subject to Change Prior to Filing
Dominion

Dominion®

INFORMATIONAL OPEN HOUSE

Haymarket Project

Dominion is seeking input on a new electric transmission project to serve Prince William County

Dominion Virginia Power is committed to providing safe and reliable service to customers. As the demand for electricity is growning rapidly in the area, it has become necessary for Dominion to add facilities that transport and deliver power to local homes and businesses.

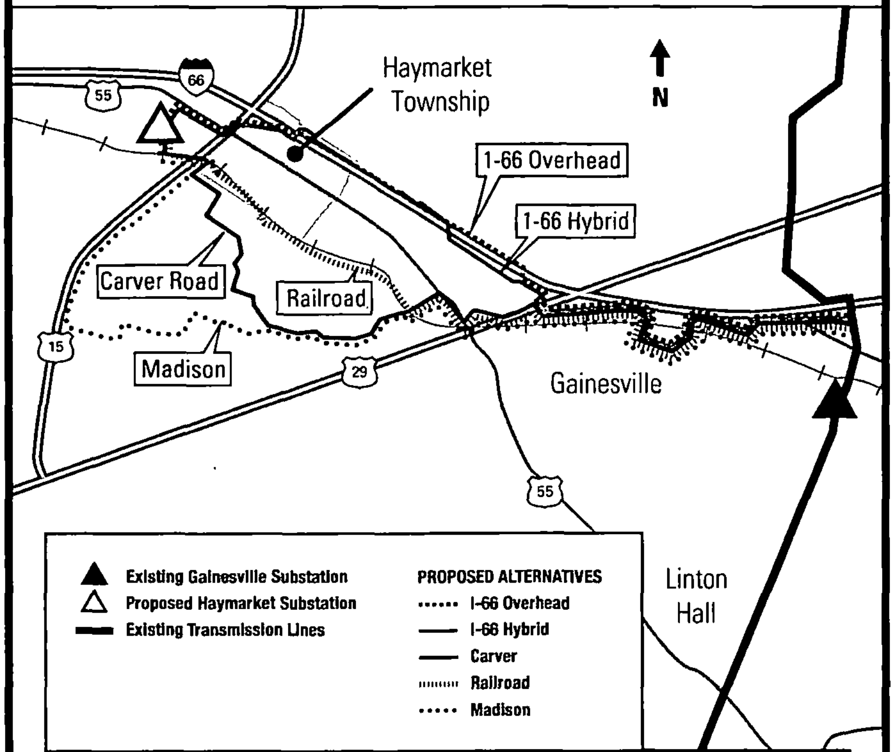
Dominion has been working to identify options for a new 230 kilovolt transmission line to serve a new, local substation that will support economic development and improve reliability for the community. To do this, Dominion must file an application with the Virginia State Corporation Commission.

We want to share our plans and hear your views prior to developing the project application. Stop by our Open House event to learn more about what this project will mean for you and your community. We welcome your ideas.

For more information regarding the Haymarket project, please visit our website at www.dom.com, keyword: Haymarket. Or call 1-888-291-0190 Monday - Friday, 7:00 a.m. - 5:00 p.m. For routine business or reporting an outage, please call 1-866-DOM-HELP (1-866-366-4357).

OPEN HOUSE

WEDNESDAY, JULY 15, 2015
5:00 to 8:00 p.m.
Battlefield High School
Open Area Cafeteria
15000 Graduation Drive
Haymarket, Virginia 20169



Attachment III.B.5

Dominion Virginia Power
701 East Cary Street, Richmond, VA 23219
Mailing Address: P.O. Box 26666
Richmond, VA 23261
dom.com

Dominion

October 5, 2015

Mr. Brian Henshaw
Town Manager
Town of Haymarket
15000 Washington Street
Suite 100
Haymarket, VA 20169

RE: Dominion Virginia Power's Proposed Haymarket 230 kV Double Circuit Transmission Line Loop and 230-34.5 kV Haymarket Substation

Dear Mr. Henshaw:

As you are aware, it has become necessary for Dominion Virginia Power (Dominion) to keep pace with growing electrical demand by proposing to construct additional electric transmission facilities. Dominion's Haymarket double circuit 230kV Transmission Line and Substation Project will contribute to maintaining reliable electric service for the community while addressing economic development growth in the high tech sector within Prince William County.

Dominion met with various Town of Haymarket and Prince William County officials and representatives on multiple occasions to present the Project, hear and understand the preferences of the Town and County, and to advise the Town and County of the Company's intention to file an application for this Project with the Virginia State Corporation Commission (SCC) in 2015. Pursuant to Virginia State Code §15.2-2202, Dominion respectfully invites The Town of Haymarket to share any interests related to our proposal.

Dominion is committed to continuing dialogue about this project. In addition to our on-going communications, we will provide The Town of Haymarket a copy of the SCC application when filed. Project information may also be found at dom.com, keyword *Haymarket*. Please do not hesitate to contact me with any questions. I may be reached at (804) 771-6082 or by e-mail at Diana.Faison@dom.com.

Sincerely,

Diana Faison
Sr. Siting and Permitting Specialist
Electric Transmission Lines

Dominion Virginia Power
701 East Cary Street, Richmond, VA 23219
Mailing Address: P.O. Box 26666
Richmond, VA 23261
dom.com

Dominion®

15511020?

October 5, 2015

Mr. Tim Hemstreet
County Administrator
Loudoun County
One Harrison Street SE
Mail Stop #02
Leesburg, Virginia 20175

RE: Dominion Virginia Power's Proposed Haymarket 230 kV Double Circuit Transmission Line Loop and 230-34.5 kV Haymarket Substation

Dear Mr. Hemstreet:

As you are aware, it has become necessary for Dominion Virginia Power (Dominion) to keep pace with growing electrical demand by proposing to construct additional electric transmission facilities. Dominion's Haymarket double circuit 230kV Transmission Line and Substation Project will contribute to maintaining reliable electric service for the community while addressing economic development growth in the high tech sector.

Dominion is notifying Loudoun County that as part of the Haymarket project, which is primarily located within Prince William County, that associated work with the Company's Loudoun substation is within Loudoun County. We intend to file an application for this Project with the Virginia State Corporation Commission (SCC) in 2015. Pursuant to Virginia State Code §15.2-2202, Dominion respectfully invites Loudoun County to share any additional interests related to our proposal.

Dominion is committed to continuing dialogue about this project, and we are available to meet with you to address questions or concerns. In addition, we will provide the County a copy of the SCC application when filed. Project information may also be found at dom.com, keyword *Haymarket*. Please do not hesitate to contact me with any questions. I may be reached at (804) 771-6082 or by e-mail at Diana.Faison@dom.com.

Sincerely,

Diana Faison
Sr. Siting and Permitting Specialist
Electric Transmission Lines

Dominion Virginia Power
701 East Cary Street, Richmond, VA 23219
Mailing Address: P.O. Box 26666
Richmond, VA 23261
dom.com

Dominion

1511102907

October 5, 2015

Ms. Melissa S. Peacor
County Executive
Prince William County
One County Complex Court
Prince William, Virginia 22192

RE: Dominion Virginia Power's Proposed Haymarket 230 kV Double Circuit Transmission Line Loop and 230-34.5 kV Haymarket Substation

Dear Ms. Peacor:

As you are aware, it has become necessary for Dominion Virginia Power (Dominion) to keep pace with growing electrical demand by proposing to construct additional electric transmission facilities. Dominion's Haymarket double circuit 230kV Transmission Line and Substation Project will contribute to maintaining reliable electric service for the community while addressing economic development growth in the high tech sector within Prince William County.

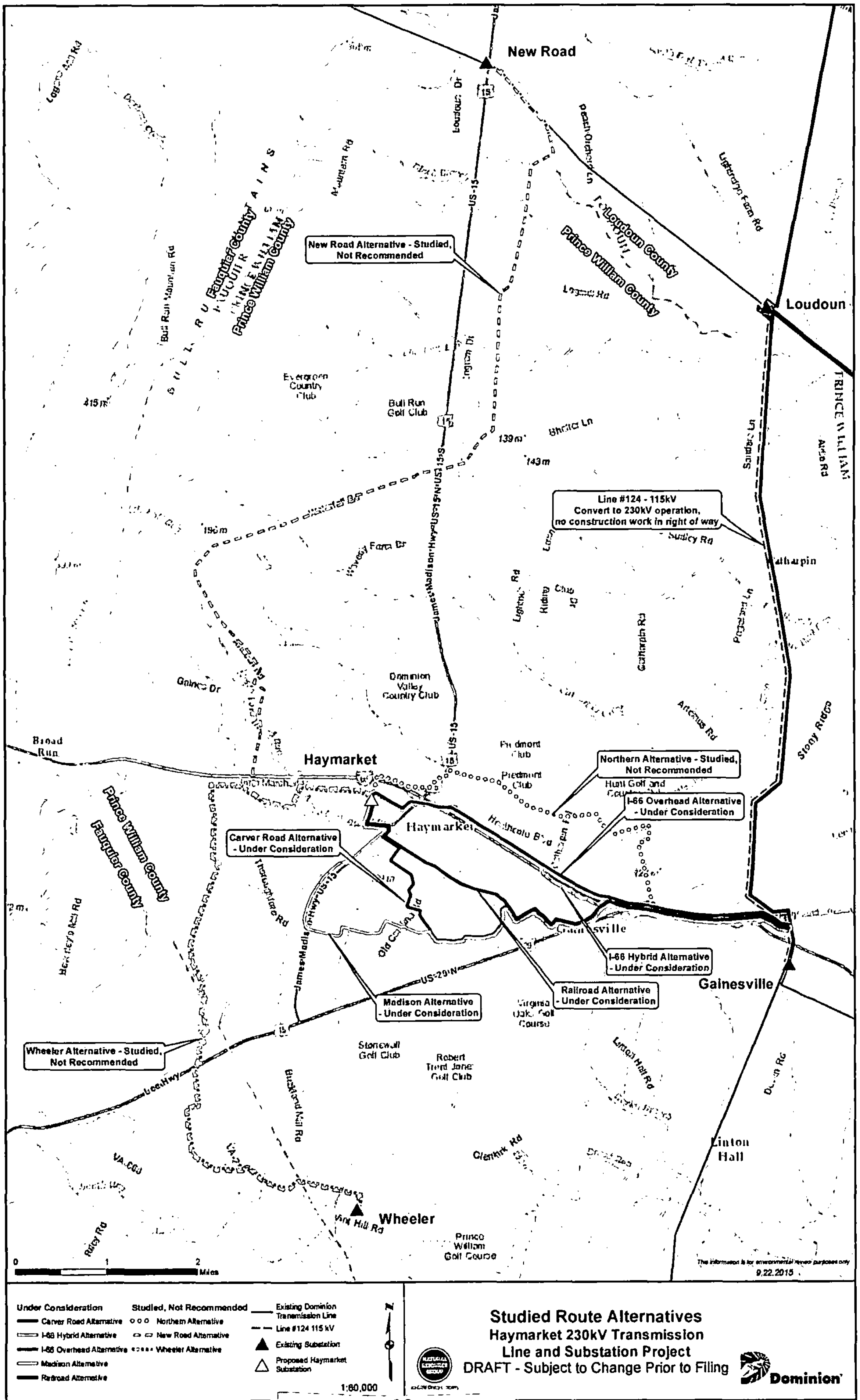
Dominion has met with various county officials and representatives on multiple occasions to present the Project, hear and understand the preferences of the County, and to advise Prince William County of the Company's intention to file an application for this Project with the Virginia State Corporation Commission (SCC) in 2015. In accordance with §15.2-2202 of the Code of Virginia, Dominion respectfully invites Prince William County to share any additional interests related to the proposal.

Dominion is committed to continuing dialogue on this project. In addition to our on-going communications, we will provide the County a copy of the SCC application when filed. Project information may also be found at dom.com, keyword *Haymarket*. Please do not hesitate to contact me with any questions. I may be reached at (804) 771-6082 or by e-mail at Diana.Faison@dom.com.

Sincerely,

Diana Faison
Sr. Siting and Permitting Specialist
Electric Transmission Lines

151110207


New Road
Loudoun
Haymarket
Gainesville
Wheeler
Linton Hall
Catharpin
New Road Alternative - Studied, Not Recommended
Line #124 - 115kV Convert to 230kV operation, no construction work in right of way
Northern Alternative - Studied, Not Recommended
I-66 Overhead Alternative - Under Consideration
Carver Road Alternative - Under Consideration
I-66 Hybrid Alternative - Under Consideration
Railroad Alternative - Under Consideration
Madison Alternative - Under Consideration
Wheeler Alternative - Studied, Not Recommended
Loudoun County
Prince William County
Fauquier County
Evergreen Country Club
Bull Run Golf Club
Dominion Valley Country Club
Piedmont Club
Stonewall Golf Club
Robert Trent Jones Golf Club
Prince William Golf Course
Virginia Oaks Golf Course
Broad Run
US-15
US-29
Lee Hwy
James Madison Hwy
Old Carolina Rd
Thoroughfare Rd
Heathcote Blvd
Sudley Rd
Stony Ridge
Vint Hill Rd
Glenkirk Rd
Linton Hall Rd
Logmill Rd
Loudoun Dr
Peach Orchard Ln
Antioch Rd
Gaithersburg Rd
Buckland Mill Rd
Bull Run Mountain Rd
Ridley Rd
Artemus Rd
0 1 2 Miles
The information is for environmental review purposes only
9.22.2015
Under Consideration
Carver Road Alternative
I-66 Hybrid Alternative
I-66 Overhead Alternative
Madison Alternative
Railroad Alternative
Studied, Not Recommended
Northern Alternative
New Road Alternative
Wheeler Alternative
Existing Dominion Transmission Line
Line #124 115 kV
Existing Substation
Proposed Haymarket Substation
1:60,000
Studied Route Alternatives
Haymarket 230kV Transmission Line and Substation Project
DRAFT - Subject to Change Prior to Filing
Dominion

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

C. Detail the nature, location, and ownership of all buildings which would have to be demolished or relocated if the project is built as proposed.

Response:

Proposed Route:
No structures will need to be removed.

Carver Road Alternative Route:
There are three outbuildings (private sheds) along the right-of-way which may need to be relocated.

Madison Alternative Route:
No structures will need to be removed.

Railroad Alternative Route:
No structures will need to be removed.

I-66 Hybrid Alternative Route:
No structures will need to be removed.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

D. What existing physical facilities will the line parallel, if any, such as existing transmission lines, railroad tracks, highways, pipelines, etc.? Describe the current use and physical appearance and characteristics of the existing right-of-way that would be paralleled. How long has the right-of-way been in use?

Response: **Proposed Route:**

The Proposed Route would parallel various road rights-of-way for about 4.5 miles. These roads include I-66, University Boulevard, and James Madison Highway (U.S. 15). These road rights-of-way vary in physical appearance from traversing more industrial areas to more residential areas. The majority of the 4.5 miles the route is paralleling I-66, approximately 15-40 feet outside of the sound wall. Interstate 66 is a four lane divided highway in the Project area and passes through both industrial and developed residential areas. I-66 has been in use in the Project area since the early 1960s.

Carver Road Alternative Route:

The Carver Road Alternative Route would parallel the Norfolk Southern Railroad for approximately 0.4 mile along the eastern portion of the route. An additional mile is parallel with the railroad and a road right-of-way. The railroad line is used exclusively for freight trains. The railroad line between Manassas and Haymarket was built in 1854. The currently proposed Gainesville-Haymarket Virginia Railway Express would upgrade the existing Norfolk Southern "B" Line Branch. The surrounding area is predominantly industrial/commercial in nature.

The Proposed Route would parallel various road rights-of-way for about 3.6 miles. These roads include I-66, University Boulevard, Daves Store Lane, John Marshall Highway (SR 55), Carver Road, and James Madison Highway (U.S. 15). These road rights-of-way vary in physical appearance from traversing more industrial areas to more residential areas. I-66 has been in use in the Project area since the early 1960s.

The Proposed Route would parallel electric distribution lines for about 0.3 mile including 0.2 mile of distribution line south of Carver Road and 0.1 mile near the crossing of Haymarket Drive. These lines are located in predominantly forested areas in proximity to some residences.

Madison Alternative Route:

The Madison Alternative Route would parallel the Norfolk Southern Railroad for approximately 0.4 mile along the eastern portion of the route. The railroad

line is used exclusively for freight trains. The railroad line between Manassas and Haymarket was built in 1854. The currently proposed Gainesville-Haymarket Virginia Railway Express would upgrade the existing Norfolk Southern "B" Line Branch. The surrounding area is predominantly industrial/commercial in nature.

The Madison Alternative Route would parallel various road rights-of-way for about 5.1 miles. These roads include I-66, University Boulevard, Daves Store Lane, John Marshall Highway (SR 55), Thoroughfare Road, and James Madison Highway (U.S. 15). These road rights-of-way vary in physical appearance from traversing more industrial areas to more residential areas. I-66 has been in use in the Project area since the early 1960s. James Madison Highway (U.S. 15) was originally constructed in the 1920s and consists of a two lane highway where it would be paralleled by the Madison Alternative. The highway crosses predominantly forested land in this area.

The Madison Alternative Route would parallel 0.2 mile of distribution line south of Carver Road. These lines are located in predominantly forested areas in proximity to some residences.

I-66 Hybrid Alternative Route:

The I-66 Hybrid Alternative Route would parallel various road rights-of-way for about 5.1 miles. These roads include I-66, University Boulevard, and James Madison Highway (U.S. 15). These road rights-of-way vary in physical appearance from traversing more industrial areas to more residential areas. The majority of the 5.1 miles the route is paralleling I-66, which is a four lane divided highway in the Project area and passes through industrial and developed residential areas. I-66 has been in use in the Project area since the early 1960s.

Railroad Alternative Route:

The Railroad Alternative Route would parallel the Norfolk Southern Railroad for approximately 1.4 miles. The railroad line is used exclusively for freight trains. The railroad line between Manassas and Haymarket was built in 1854. The currently proposed Gainesville-Haymarket Virginia Railway Express would upgrade the existing Norfolk Southern "B" Line Branch. The surrounding area is a mix of predominantly industrial/commercial areas and forested land between residential developments.

The Railroad Alternative Route would parallel various road rights-of-way for about 3.1 miles. These roads include I-66, University Boulevard, Daves Store Lane, and John Marshall Highway (SR 55). These road rights-of-way vary in physical appearance from traversing more industrial areas to more residential areas. I-66 has been in use in the Project area since the early 1960s.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

E. Has the Company investigated land use plans in the areas of the proposed route? How would the building of the proposed line effect future land use of the areas affected?

1. Has the Company determined from the governing bodies of each county, city and town in which the proposed facilities will be located whether those bodies have designated the important farmlands within their jurisdictions, as required by Virginia Code Section 3.2-205 B?

2. If so, and if any portion of the proposed facilities will be located on any such important farmland, please:

a. Include maps and other evidence showing the nature and extent of the impact on such farmlands.

b. Describe what alternatives exist to locating the proposed facilities on the affected farmlands, and why those alternatives are not suitable.

c. Describe the applicant's proposals to minimize the impact of the facilities on the affected farmland.

Response: As noted in Section III.B, Dominion Virginia Power and Natural Resource Group, LLC ("NRG") met with the local Planning Department staff from Prince William and Fauquier Counties and the Town of Haymarket to investigate existing and proposed land use plans. In addition, NRG consulted the comprehensive plans for each of these localities as well. Detail regarding the land use plans in the areas of the Proposed and Alternative Routes is presented in Section 3.1.5 of the Routing Study.

1. There are no such designated farmlands crossed by the Proposed or Alternative Routes.

   Fauquier County and Prince William County have designated important farmland within their jurisdictions through the implementation of Agricultural and Forestal Districts ("AFDs"). The Virginia Agricultural and Forestal Districts Act provides for the creation of conservation districts. These districts are designed to conserve, protect, and encourage the development and improvement of a locality's agricultural and forested lands for the production of food and other products, while also conserving and protecting land as valued natural and ecological resources. These districts are voluntary agreements between landowners and the locality, and offer benefits to landowners when they agree to keep their land in its

current use for between 4 and 10 years. AFDs are established under the guidelines set forth in Va. Code § 15.2-4300 et seq. and each district must contain at least 200 acres. Both Fauquier and Prince William Counties have developed AFDs; however, no AFDs will be crossed by the Proposed Route or Alternative Routes.

2. Not applicable. See Attachment III.E.2.


Haymarket
Gainesville
Dominion
Attachment III.E.2
Gainesville to Haymarket 230kV Transmission Line and Substation Project
Proposed Route
I-66 Hybrid Alternative
Carver Road Alternative
Madison Alternative
Railroad Alternative
Existing Dominion Transmission Line
Proposed Haymarket Substation
Existing Substation
Agricultural Value
Class V: Prime Farmland
Class IV: Statewide Importance
N
W
E
S
NATURAL RESOURCES GROUP
0
1,250
2,500
Feet
1:27,000
Germantown
Front Royal
Washin
Arlington
Manassas
Dale City
Culpeper
FILE: M:\Clients\D-FIDOM\Haymarket6_ArcGIS\2015\10\Solsh_DOM_HAY_Attachment_III_E_2.mxd | REVISED: 11/02/2015 | SCALE: 1:27,000 when printed at 11x17
DRAWN BY: JEBAKKEN

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

F. Identify the following that lie within or adjacent to the proposed right-of-way:

1. **Any district, site, building, structure, or other object included in the National Register of Historic Places maintained by the U.S. Secretary of the Interior;**

2. **Any historic landmark, site, building, structure, district or object included in the Virginia Landmarks Register maintained by the Virginia Board of Historic Resources;**

3. **Any historic district designated by the governing body of any city or county;**

4. **Any state archaeological site or zone designated by the Director of the Virginia Department of Historic Resources, or his predecessor, and any site designated by a local archaeological commission, or similar body;**

5. **Any underwater historic property designated by the Virginia Department of Historic Resources, or predecessor agency or board;**

6. **Any National Natural Landmark designated by the U.S. Secretary of the Interior;**

7. **Any area or feature included in the Virginia Registry of Natural Areas maintained by the Virginia Department of Conservation and Recreation;**

8. **Any area accepted by the Director of the Virginia Department of Conservation and Recreation for the Virginia Natural Area Preserves System;**

9. **Any conservation easement qualifying under Sections 10.1-1009 to -1016 of the Code of Virginia, or prior provision of law;**

10. **Any state scenic river;**

11. **Any federal state, or local park, forest, game or wildlife preserve, recreational area, or similar facility; Features, sites, and the like listed in 1 through 10 above need not be identified again.**

Response: The right-of-way for the Proposed and Alternative Routes is within or adjacent to the following features:

1. **National Register of Historic Places**

The NRHP-listed and -eligible resources located in the vicinity of the Proposed and Alternative Routes are presented below. A discussion of potential effects of the Alternative Routes on these resources is contained in Section 4.4 of the Environmental Routing Study.

<u>Proposed Route:</u>

Two NRHP-eligible resources, Buckland Mills Battlefield (030-5152) and Manassas Station Operations Battlefield (076-5036), are located within and adjacent to the Proposed Route right-of-way. Additionally, there are 10 resources being considered that are located within the tiered study areas for the Proposed Route as defined by the Virginia Department of Historic Resources ("VDHR") 2008 *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (the "VDHR Guidelines"), including the NRHP-listed St. Paul's Episcopal Church (233-0002), the NRHP-listed Old Town Hall and Haymarket School (233-0006), the NRHP-listed Manassas National Battlefield Park Historic District (076-0271), the NRHP-eligible Masonic Temple (233-5015), the NRHP-eligible Haymarket Post Office (233-0005), the NRHP-eligible Winterham (233-0008), the NRHP-eligible Gainesville District School (076-5381), the NRHP-eligible Monroe House (076-0147), the unevaluated Thoroughfare Gap Battlefield (030-5610), and the unevaluated Second Battle of Manassas (076-5190). The Monroe House was destroyed in 1980, however, and is no longer extant.

<u>Carver Road Alternative Route:</u>

Two NRHP-eligible resources, Buckland Mills Battlefield (030-5152) and Manassas Station Operations Battlefield (076-5036), are located within and adjacent to the Carver Road Alternative Route right-of-way. Additionally, there are 10 resources being considered that are located within the tiered study areas for the Carver Road Alternative Route as defined by the VDHR Guidelines, including the NRHP-listed St. Paul's Episcopal Church (233-0002), the NRHP-listed Old Town Hall and Haymarket School (233-0006), the NRHP-listed Manassas National Battlefield Park Historic District (076-0271), the NRHP-eligible Masonic Temple (233-5015), the NRHP-eligible Haymarket Post Office (233-0005), the NRHP-eligible Winterham (233-0008), the NRHP-eligible Woodlawn (076-0122), the NRHP-eligible Monroe House (076-0147), the unevaluated Thoroughfare Gap Battlefield

(030-5610), and the unevaluated Second Battle of Manassas (076-5190). The Monroe House was destroyed in 1980, however, and is no longer extant.

Madison Alternative Route:

Two NRHP-eligible resources, Buckland Mills Battlefield (030-5152) and Manassas Station Operations Battlefield (076-5036), are located within and adjacent to the Madison Alternative right-of-way. Additionally, there are 11 resources being considered that are located within the tiered study areas for the Madison Alternative Route as defined by the VDHR Guidelines, including the NRHP-listed St. Paul's Episcopal Church (233-0002), the NRHP-listed Old Town Hall and Haymarket School (233-0006), the NRHP-listed Buckland Historic District and Expansion (076-0313), the NRHP-listed Manassas National Battlefield Park Historic District (076-0271), the NRHP-eligible Winterham (233-0008), the NRHP-eligible Woodlawn (076-0122), the NRHP-eligible Monroe House (076-0147), the unevaluated Thoroughfare Gap Battlefield (030-5610), the unevaluated Second Battle of Manassas (076-5190), the unevaluated Site, James Madison Highway (076-0463), and the unevaluated Single Dwelling, 15947 Thoroughfare Road (076-5669). The Monroe House was destroyed in 1980, however, and is no longer extant.

I-66 Hybrid Alternative Route:

Two NRHP-eligible resources, Buckland Mills Battlefield (030-5152) and Manassas Station Operations Battlefield (076-5036), are located within and adjacent to the I-66 Hybrid Alternative Route right-of-way. Additionally, there are 10 resources being considered that are located within the tiered study areas for the I-66 Hybrid Alternative Route as defined by the VDHR Guidelines, including the NRHP-listed St. Paul's Episcopal Church (233-0002), the NRHP-listed Old Town Hall and Haymarket School (233-0006), the NRHP-listed Manassas National Battlefield Park Historic District (076-0271), the NRHP-eligible Masonic Temple (233-5015), the NRHP-eligible Haymarket Post Office (233-0005), the NRHP-eligible Winterham (233-0008), the NRHP-eligible Gainesville District School (076-5381), the NRHP-eligible Monroe House (076-0147), the unevaluated Thoroughfare Gap Battlefield (030-5610), and the unevaluated Second Battle of Manassas (076-5190). The Monroe House was destroyed in 1980, however, and is no longer extant.

Railroad Alternative Route:

Two NRHP-eligible resources, Buckland Mills Battlefield (030-5152) and Manassas Station Operations Battlefield (076-5036), are located

within and adjacent to the Railroad Alternative Route right-of-way. Additionally, there are 12 resources being considered that are located within the tiered study areas for the Railroad Alternative Route as defined by the VDHR Guidelines, including the NRHP-listed St. Paul's Episcopal Church (233-0002), the NRHP-listed Old Town Hall and Haymarket School (233-0006), the NRHP-listed Manassas National Battlefield Park Historic District (076-0271), the NRHP-eligible Masonic Temple (233-5015), the NRHP-eligible Haymarket Post Office (233-0005), the NRHP-eligible Winterham (233-0008), the NRHP-eligible Woodlawn (076-0122), the NRHP-eligible Gainesville District School (076-5381), the NRHP-eligible Monroe House (076-0147), the unevaluated Thoroughfare Gap Battlefield (030-5610), the unevaluated Second Battle of Manassas (076-5190), and the unevaluated North Fork Steel Truss Bridge (076-0150). The Monroe House was destroyed in 1980, however, and is no longer extant.

Haymarket Substation:

Two NRHP-eligible resources, Buckland Mills Battlefield (030-5152) and Manassas Station Operations Battlefield (076-5036), are located within and adjacent to the Haymarket Substation property. Additionally, there are four resources being considered that are located within the tiered study areas for the Haymarket Substation as defined by the VDHR Guidelines, including the NRHP-listed St. Paul's Episcopal Church (233-0002), the NRHP-listed Old Town Hall and Haymarket School (233-0006), the unevaluated Thoroughfare Gap Battlefield (030-5610), and the unevaluated Second Battle of Manassas (076-5190).

2. Virginia Landmarks Register

All of the properties discussed above that are listed on the NRHP are also included in the Virginia Landmarks Register ("VLR"). No additional properties listed on the VLR are crossed by or in the vicinity of any of the Project components.

3. Historic District

A single city-designated historic district, the Old and Historic Town of Haymarket, is crossed by the Proposed Route, as well as the Railroad Alternative, and I-66 Hybrid Alternative Routes. No county-designated historic districts are crossed or adjacent to any of the Project components.

4. Archeological Site or Zone

Any archaeological site or zone located within or adjacent to the route alternative rights-of-way are presented below.

Proposed Route:

The Proposed Route right-of-way intersects three historic archaeological sites, 44PW0985, 44PW0986 and 44PW1121. Sites 44PW0985 and 44PW0986 are not eligible for listing in the NRHP, while Site 44PW1121 has not been assessed for NRHP eligibility.

Carver Road Alternative Route:

The Carver Road Alternative Route right-of-way intersects one multi-component and two historic archaeological sites: 44PW1854, 44PW1853, and 44PW1636 respectively. Sites 44PW1854 and 44PW1853 have not been assessed for NRHP eligibility, while Site 44PW1636 is not eligible for listing in the NRHP.

Madison Alternative Route:

The Madison Alternative Route intersects two historic archaeological sites, 44PW1498 and 44PW1963, neither of which has been assessed for NRHP eligibility. Additionally, one historic archaeological site, 44PW1852, is located adjacent to the Madison Alternative Route right-of-way. Site 44PW1852 has not been assessed for NRHP eligibility.

I-66 Hybrid Alternative Route:

The I-66 Hybrid Alternative Route right-of-way intersects two historic archaeological sites, 44PW0986 and 44PW1121. Site 44PW0986 is not eligible for listing in the NRHP, while Site 44PW1121 has not been assessed for NRHP eligibility.

Railroad Alternative Route:

The Railroad Alternative Route intersects one prehistoric archaeological site (44PW0893) and two multi-component archaeological sites (44PW1853 and 44PW1854); none of which have been assessed for NRHP eligibility.

Haymarket Substation:

There are no previously recorded archaeological sites within or adjacent to the Haymarket Substation property.

5. Underwater Historic Property

There are no underwater historic properties designated by the VDHR crossed or adjacent to any of the Project components.

6. National Natural Landmark

There are no National Natural Landmarks crossed by or in the vicinity of any of the Project components.

7. Virginia Registry of Natural Areas

There are no Virginia Registry of Natural Areas crossed by or in the vicinity of any Project components.

8. Virginia Natural Area Preserve System

There are no areas accepted by the Director of the Virginia Department of Conservation and Recreation for the Virginia Natural Area Preserve System crossed by any of the Project components.

9. Conservation Easement

The Carver Road Alternative Route avoids all conservation easements. The other Alternative Routes cross conservation easements. The crossings are summarized below by route.

Proposed Route:

The Proposed Route would cross about 0.1 mile of land designated as Prince William County Permanently Protected Open Space, all of which is associated with the Parks at Piedmont HOA. The Prince William County Comprehensive Plan states that lands associated with HOAs are excluded from protected open space unless they are also protected as a Resource Protection Area ("RPA") under the Chesapeake Bay Preservation Act ("CBPA") or another type of easement. Portions of this crossing are also designated as an RPA, however, construction, installation, operation, and maintenance of electric transmission lines are conditionally exempt from the CBPA as stated in the exemption for public utilities, railroads, public roads, and facilities in 9 VAC 25-830-150; therefore, the Project is not subject to restrictions in RPAs.

Madison Alternative Route:

The Madison Alternative Route would cross about 0.6 mile of a North Virginia Conservation Trust ("NVCT") easement. The NVCT is a nonprofit organization that helps permanently conserve land by working with landowners who voluntarily agree to legal restrictions to conserve their lands. The NVCT follows the national standards and practices of the Land Trust Alliance and is accredited by the Land Trust Accreditation Commission. NVCT easements within the Project area are private, open space easements. The centerline of the route

does not cross the easement, however, the right-of-way would extend onto the easement.

I-66 Hybrid Alternative Route:

The I-66 Hybrid Alternative Route would cross about 0.2 mile of land designated as Prince William County Permanently Protected Open Space. More than half of this distance is associated with the Crossroads HOA, while the remainder is associated with the Parks at Piedmont HOA. As discussed above, unless also protected as an RPA or another type of easement, HOAs are excluded from protected open space.

Railroad Alternative Route:

The Railroad Alternative Route would cross about 0.8 mile of land designated as Prince William County Permanently Protected Open Space, all of which is associated with the Somerset Crossing HOA. As discussed above, unless also protected as an RPA or another type of easement, HOAs are excluded from protected open space.

During development of route alternatives for the Project, Prince William County accepted a gift Open Space and Trail easement from the Somerset Crossing HOA. The open space easement was intended to protect woodlands and wetlands along North Fork Broad Run. The trail easement was intended to provide recreational access to the open space easement. Development within the easement requires approval from Prince William County. The Railroad Alternative Route would cross the open space easement for 0.8 mile.

Haymarket Substation:

The Haymarket Substation does not lie within or adjacent to any conservation easements qualifying under the Virginia Conservation Easement Act (Va. Code §§ 10.1-1009 *et seq.*).

10. State Scenic River

There are no state scenic rivers crossed by or in the vicinity of any of the Project components.

11. Recreational Area

The Proposed and Alternative Routes cross the following features:

Proposed Route:

The Proposed Route would cross the Culpeper Loop of the Virginia Birding and Wildlife Trail in four locations. The first crossing of the Culpeper Loop of the Virginia Birding and Wildlife Trail is at the route's crossing of Lee Highway (U.S. 29). The road would be spanned and no impacts to the trail would occur. The trail crossing is in a location with much commercial and industrial development and would not impact the scenic quality of the trail in this location.

The Proposed Route would also make one crossing along I-66, one on James Madison Highway (U.S. 15), and one on John Marshall Highway (SR 55). All of these crossings would be spanned and take place in areas with large highways/roads and either high density residential development or commercial/business development. This route is not expected to impact the scenic quality of the trail in these locations.

Carver Road Alternative Route:

The Carver Road Alternative would cross the Culpeper Loop of the Virginia Birding and Wildlife Trail at the route's crossing of Lee Highway (U.S. 29) as described above for the Proposed Route. The Carver Road Alternative would also cross the trail at the route's second crossing of I-66 just west of the Lee Highway (U.S. 29) crossing. This crossing would be spanned and take place in areas with large highways/roads and high density residential development and near commercial/business development. This route is not expected to impact the scenic quality of the trail in these locations.

Madison Alternative Route:

The Madison Alternative Route would cross the Culpeper Loop of the Virginia Birding and Wildlife Trail at the route's crossing of Lee Highway (U.S. 29) and I-66 as described above for the Carver Road Alternative.

I-66 Hybrid Alternative Route:

The I-66 Hybrid Alternative Route would cross the Culpeper Loop of the Virginia Birding and Wildlife Trail in six locations. The first would be the route's crossing of Lee Highway (U.S. 29) as described above for the Proposed Route. This route would also make three crossings along I-66, one on James Madison Highway (U.S. 15), and one on John Marshall Highway (SR 55). With the exception of the Lee Highway crossing and the first I-66 crossing, the remaining crossings would be constructed underground in areas with large highways/roads and either high density residential development or

commercial/business development. This route would not impact the scenic quality of the trail in these locations.

Railroad Alternative Route:

The Railroad Alternative Route would cross the Culpeper Loop of the Virginia Birding and Wildlife Trail at the route's crossing of Lee Highway (U.S. 29) and I-66 as described above for the Carver Road Alternative.

Haymarket Substation:

There are no recreation areas located within or adjacent to the lands associated with the Haymarket Substation.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

G. List any airports where the proposed route would place a structure or conductor within the glide path of the airport. Advise of contacts and results of contacts made with appropriate officials regarding the effect on the airport's operations.

Response: There are no airports where the Proposed or Alternative Routes would place a structure or conductor within the glide path of the airport. The closest federally-regulated airport to any of the route alternatives under consideration is the Manassas Regional Airport, located approximately 5.1 miles southeast of the tie-in location near the Gainesville Substation. The airport is a city-owned public use airport.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

H. Advise of any scenic byways that are in close proximity to or will be crossed by the proposed transmission line and describe what steps will be taken to mitigate any visual impacts on such byways. Describe typical mitigation techniques for other highway's crossings.

Response: The following scenic byways are in the vicinity of or crossed by the Proposed or Alternative Routes:

Proposed Route:

The Proposed Route would cross the James Madison Highway (U.S. 15), also referred to as the Journey Through Hallowed Ground Byway, which is both a Virginia State Scenic Byway and a National Scenic Byway, and parallel it for a distance of about 0.1 mile. The route would also cross the John Marshall Highway (SR 55), which is a Virginia State Scenic Road, and parallel it for about 0.4 mile. The crossing of John Marshall Highway (SR 55) would occur in an area that is commercially and industrially developed on the northeast side of the highway and undeveloped on the southwest side. The crossing would be visible to drivers heading in both directions along the highway and may slightly alter the scenic quality of the road at the crossing location depending on exact tower placement. The crossing of the James Madison Highway (U.S. 15) would also occur in an area that is commercially and industrially developed on the west side of the highway and primarily undeveloped on the east side. The crossing would be visible to drivers heading in both directions along the highway and may slightly alter the scenic quality of the road at the crossing location depending on exact tower placement. The crossings would be visible to drivers and may slightly alter the scenic quality of the road at the crossing locations depending on the exact tower placement.

Carver Road Alternative Route:

The Carver Road Alternative Route would cross the John Marshall Highway (SR 55), which is a Virginia State Scenic Road, and the James Madison Highway (U.S. 15), which is both a Virginia State Scenic Byway and National Scenic Byway also referred to as the Journey Through Hallowed Ground Byway. In both instances the roads would be spanned. Both of these crossings would occur in similarly developed areas as those described for the Proposed Route above. The crossings would be visible to drivers and may slightly alter the scenic quality of the road at the crossing locations depending on the exact tower placement.

Madison Alternative Route:

The Madison Alternative Route would cross the John Marshall Highway (SR 55), which is a Virginia State Scenic Road, in the same location as described for the Carver Road Alternative Route above and may slightly alter the scenic quality of the road at the crossing location depending on exact tower placement. The route would also make multiple crossings of the James Madison Highway (U.S. 15), also referred to as the Journey Through Hallowed Ground Byway, which is both a Virginia State Scenic Byway and National Scenic Byway, and parallel the scenic road for about 1.5 miles. This portion of the scenic road is forested and the placement of towers along the highway would alter the scenic quality of the road for these 1.5 miles.

***I-66* Hybrid Alternative Route:**

The I-66 Hybrid Alternative Route would make the same crossings of scenic roads as those described above for the Proposed Route. The crossings would be visible to drivers and may slightly alter the scenic quality of the road at the crossing locations depending on the exact tower placement.

Railroad Alternative Route:

The Railroad Alternative Route would make the same crossings of scenic roads as those described for the Carver Road Alternative Route above. The crossings would be visible to drivers and may slightly alter the scenic quality of the road at the crossing locations depending on the exact tower placement.

Haymarket Substation:

The Haymarket Substation is located south of the John Marshall Highway (SR 55) along a portion that is designated as a Virginia State Scenic Road. A buffer of trees would be maintained between the byway and the substation location. Forested land would surround the substation however it is still likely that the substation would be visible to drivers heading both east and west along the highway.

IV. HEALTH ASPECTS OF EMF

A. State the calculated maximum electric and magnetic field (EMF) levels that are expected to occur at the edge of the right-of-way. If the new transmission line is to be constructed on an existing electric transmission line right-of-way, provide the present EMF levels as well as the maximum levels calculated at the edge of right-of-way after the new line is operational.

Response: Public exposure to magnetic fields is best estimated by field levels from power lines calculated at annual average loading. For any day of the year, the EMF levels associated with average conditions provide the best estimate of potential exposure. Maximum (peak) values are less relevant as they may occur for only a few minutes or hours each year.

This section describes the levels of EMF associated with the existing and proposed transmission lines. EMF levels are provided for the historical (2014) and future (2018) annual average and maximum (peak) loading conditions.

Existing lines – Average historical loading

EMF levels were calculated for the existing lines at the ***historical average*** load condition (101 amps for Line #124, 544 amps for Line #2030, 943 amps for Line #535, and 724 amps for Line #569) and at an operating voltage of 120.75 kV, 241.5 kV, and 525 kV when supported on the existing structures – see Attachments II.A.3.a and b.

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at an average historical load operating temperature and at a clearance to ground of 28.79 and 29.52 feet for Line #124, 28.42 and 29.15 feet for Line #2030, 46.62 and 50.89 feet for Line #535, and 46.68 and 50.96 feet for Line #569.

EMF levels at the edge of the rights-of-way for the existing lines at the average historical loading:

	Western/Southern Edge		Eastern/Northern Edge	
	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
Attachment II.A.3.a	2.841	53.229	2.839	50.454
Attachment II.A.3.b	2.640	45.291	2.661	42.757

Existing lines – Peak historical loading

EMF levels were calculated for the existing lines at the ***historical peak*** load condition (369 amps for Line #124, 1767 amps for Line #2030, 1835 amps for Line #535, and 2277 amps for Line #569) and at an operating voltage of 120.75 kV, 241.5 kV, and 525 kV when supported on the existing structures – see Attachments II.A.3.a and b.

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at a peak historical load operating temperature and at a clearance to ground of 28.6 and 29.33 feet for Line #124, 25.36 and 25.61 feet for Line #2030, 46.06 and 50.25 feet for Line #535, and 45.67 and 49.81 feet for Line #569.

EMF levels at the edge of the rights-of-way for the existing lines at the historical peak loading:

	Western/Southern Edge		Eastern/Northern Edge	
	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
Attachment II.A.3.a	2.866	102.075	2.939	156.148
Attachment II.A.3.b	2.667	87.826	2.751	132.570

Proposed Project – Projected average loading in 2018

EMF levels were calculated for the Project at the ***projected average*** load condition (520 amps for Line #2030, 140 amps for Line # 2169, 315 amps for Line #2176, 1106 amps for Line #535 and 1181 amps for Line #569) and at an operating voltage of 241.5 kV and 525 kV when supported on the proposed Project structures – see Attachments II.A.3.c-f.

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at a projected average load operating temperature and at a clearance to ground of 28.57, 28.25 and 29.15 feet for Line #2030, 26.01, 28.6 and 29.52 feet for Line #2169, 28.82 and 25.98 feet for Line #2176, 54.64, 46.59 and 50.76 feet for Line #535 and 54.64, 46.59 and 50.76 feet for Line #569.

EMF levels at the edge of the rights-of-way for the Project at projected average loading:

	Western/Southern Edge		Eastern/Northern Edge	
	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
Attachment II.A.3.c	1.975	44.737	2.309	57.342
Attachment II.A.3.d	0.661	7.922	0.662	5.495
Attachment II.A.3.e	2.534	61.443	2.845	69.778
Attachment II.A.3.f	2.398	52.798	2.669	60.746

Proposed Project – Peak loading in 2018

EMF levels were calculated for the Project at the ***projected peak*** load condition (867 amps for Line #2030, 234 amps for Line #2169, 524 amps for Line #2176, 1834 amps for Line #535 and 1968 amps for Line #569) and at an operating voltage of 241.5 kV and 525 kV when supported on the Project structures – see Attachments II.A.3.c.-f.

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at a projected peak load operating temperature and at a clearance to ground of 27.91, 27.6 and 28.47 feet for Line #2030, 26.01, 28.55 and 29.45 feet for Line #2169, 28.57 and 25.92 feet for Line #2176, 54.18, 46.14 and 50.25 feet for Line #535 and 54.07, 46.03 and 50.13 feet for Line #569.

EMF levels at the edge of the rights-of-way for the Project at projected peak loading:

	Western/Southern Edge		Eastern/Northern Edge	
	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
Attachment II.A.3.c	2.000	75.228	2.341	96.708
Attachment II.A.3.d	0.660	29.910	0.662	9.186
Attachment II.A.3.e	2.554	103.117	2.879	117.445
Attachment II.A.3.f	2.420	88.672	2.701	102.277

IV. HEALTH ASPECTS OF EMF

B. If Company is of the opinion that no significant health effects will result from the construction and operation of the line, describe in detail the reasons for that opinion and provide references or citations to supporting documentation.

Response: The foundation of the Company's opinion is the conclusions of expert panels formed by national and international scientific agencies; each of these panels has evaluated the scientific research related to health and power-frequency EMF and provided conclusions that form the basis of guidance to governments and industries. The Company regularly monitors the recommendations of these expert panels to guide their approach to EMF.

Major reviews on this topic, in order of their most recent publication, include those published by the European Health Risk Assessment Network on Electromagnetic Fields Exposure (EFHRAN),[17] the International Commission on Non-Ionizing Radiation Protection (ICNIRP), the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR), the World Health Organization (WHO), and the International Committee on Electromagnetic Safety (ICES) (EFHRAN, 2010; ICNIRP, 2003, 2010; SCENIHR 2007, 2009; WHO, 2007; ICES, 2002).

Research on this topic varies widely in its approach. Some studies evaluate the effects of high EMF exposures not typically found in day-to-day life, while others evaluate the effects of common EMF exposures. The studies evaluate long-term effects (e.g., cancer, neurodegenerative diseases, and reproductive effects) and short-term biological responses. This research includes hundreds of epidemiology studies of people in their natural environment and laboratory studies of animals (*in vivo*) and isolated cells and tissues (*in vitro*). Standard scientific procedures are used by the expert panels to identify, review and summarize this large and diverse research area.

The general scientific consensus of the health agencies reviewing this research is that at levels associated with the operation of the proposed transmission lines, or other common sources of EMF in our environment, the research does not support the conclusion that EMF causes any long-term, adverse health effects.

Thus, based on the conclusions of scientific reviews and the levels of EMF associated with the Projects, the Company has determined that no adverse health effects will result from the operation of the proposed transmission lines.

[17] EFHRAN is funded by the European Commission's Executive Agency for Health and Consumers.

IV. HEALTH ASPECTS OF EMF

C. Describe any research studies the Company is aware of that meet the following criteria:

1. Became available for consideration since the completion of the Virginia Department of Health's most recent review of studies on EMF and its subsequent report to the Virginia General Assembly in compliance with 1985 Senate Joint Resolution No. 126;

2. Include findings regarding EMF that have not previously been reported and/or provide substantial additional insight into previous findings; and

3. Have been subjected to peer review.

Response: The Virginia Department of Health's most recent review of studies on EMF was completed in 2000; many peer-reviewed research studies have become available since that time and were reviewed by the scientific organizations discussed above. The WHO most recently conducted one of the most comprehensive and detailed reviews, which summarized peer-reviewed research published through early 2006 (WHO, 2007).

Research published in the peer-reviewed literature subsequent to the WHO report has been reviewed by several scientific organizations, all of which support the conclusions of the WHO (2007) report, including:

- The Health Council of the Netherlands (HCN) reviewed new research in 2007.
- SCENIHR, a committee of the European Commission, published their most recent assessment in 2009.
- The Swedish Radiation Protection Authority (SSI) updates their review annually; their most recent review evaluated research through 2007 (SSI, 2008).
- EFHRAN published the most recent review in February 2010.

These reviews can be consulted for commentary on recent studies. In addition, other recent peer-reviewed studies (e.g., Chung et al., 2010; Coble et al., 2009; Kheifets et al., 2010a, 2010b; Kroll et al., 2010; McNamee et al., 2010) provide evidence that clarifies previous findings.

- Chung et al. (2010) found no difference in lymphoma rates between cancer-prone mice exposed long-term to strong magnetic fields and an unexposed control group. Mice were exposed 21 hours per day for 40 weeks to magnetic fields up to 5,000 mG, which is hundreds to thousands of times greater than routine residential exposures. This study is

consistent with previous *in vivo* studies that found no evidence that magnetic fields promote the development of lymphoma or leukemia in laboratory animals.

- Coble et al. (2009) conducted a case-control study in the United States ("U.S.") of brain tumors (gliomas and meningiomas) in U.S. workers. This study was advanced because several different measures were used to assess individual exposure, and exposure duration was incorporated into lifetime magnetic-field exposure. No association was reported between any of the exposure metrics and brain tumors. This study's strengths are its large size and advanced exposure assessment.

- Kheifets et al. (2010a) conducted a pooled analysis of epidemiologic studies of childhood brain tumors and magnetic fields to explore the association in the larger pooled population. Ten case-control studies of childhood brain tumors were identified that met the inclusion criteria. No statistically significant associations with brain tumors were found in any of the three exposure levels, compared to average exposure less than 1 mG. A sub-group of five studies with information on calculated or measured magnetic fields greater than 3-4 mG reported a combined odds ratio that was elevated but not statistically significant.

- Kheifets et al (2010b) pooled data from studies of childhood leukemia and magnetic fields to update the previous meta-analyses on this topic published in 2000. The authors identified seven subsequent case-control studies of childhood leukemia that included measured or calculated magnetic field levels. Results showed an overall weak association with leukemia for the highest estimated long-term average exposure level (4 mG or higher) that was slightly elevated, but could not be distinguished from chance. This study confirms a positive association between average magnetic field levels greater than 3 mG and childhood leukemia, but the association could not be distinguished from chance due to small numbers.

- Kroll et al. (2010) re-evaluated a previous study in the United Kingdom that had reported childhood leukemia was associated with distance of a child's home at birth from a power line (Draper et al, 2005). Distance is considered a poor estimate of magnetic field exposure; therefore, Kroll et al. repeated the study using calculated magnetic field levels from nearby power lines. The results showed a weak, non-significant association between leukemia and the calculated magnetic fields from high-voltage power lines. As a result of small numbers and incomplete information, no strong conclusions can be drawn from this study.

- Recent research by McNamee et al. (2010a) examined how acute exposure of human subjects to 60-Hz magnetic fields affected human heart rate, heart rate variability and skin blood perfusion; no effects of exposure to an 18,000 mG magnetic field on these measures were reported. A similar

study by these investigators also reported no effects of these parameters at a lower magnetic field intensity of 2,000 mG (McNamee et al., 2010b).

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V. NOTICE

A. Furnish a proposed route description to be used for public notice purposes. Provide a map of suitable scale showing the route of the proposed project.

Response: A map of the Proposed and Alternative Routes is provided as Attachment V.A.

A written description of the route for the Project is as follows:

Proposed Route (I-66 Overhead)
The Proposed Route extends from the Haymarket Junction for 5.1 miles through Prince William County and the Town of Haymarket and terminates at the proposed Haymarket Substation. From Haymarket Junction, the route travels northwest for 0.3 mile, crossing I-66, before heading in a westerly direction for another 1.7 miles paralleling the north side of I-66 utilizing Virginia Department of Transportation (VDOT) right-of-way (ROW) to the extent feasible. The general alignment of the Proposed Route is outside of the sound wall (approximately 15'-40') to reduce the restrictions on construction due to the need for potential lane closures and/or construction timing (daily) restrictions. The segment crosses multiple on/off ramps of the interstate, University Boulevard and Lee Highway (U.S. 29). From the U.S. 29 and I-66 interchange the route heads southwest for 0.1 mile before heading northwest 1.9 miles following the northern side of I-66 and crossing Catharpin Road (SR 676) and Old Carolina Road. The route then crosses to the south side of I-66 and heads in a southwest direction for 0.3 mile, and then crosses James Madison Highway (U.S. 15). The route then heads in a southwest direction for 0.1 mile, crossing John Marshall Highway and continues on the south side of John Marshall Highway 0.4 mile before turning south and terminates into the proposed Haymarket Substation.

Two minor route variations were identified for consideration as potential adjustments to the Proposed Route. These two variations, the Jordan Lane Variation and the Walmart Variation, are discussed below.

Jordan Lane Variation
For approximately 675 feet along Jordan Lane within Haymarket Township, Dominion Virginia Power will work with local governments to negotiate an overhang easement within the dedicated road easement. However, the Company presents a minor "Jordan Lane Variation" that involves the location of one structure inside the proposed sound wall along I-66 near the east end of Jordan Lane. This variation is not visible on the notice map and would not result in material changes to the length or impacts of the Proposed Route with the exception of eliminating the crossing of the Jordan Lane dedicated road parcel.

Walmart Variation

The Company presents the Walmart Variation to limit the amount of tree removal along John Marshall Highway (SR 55) across the frontage of the three parcels immediately east of the proposed substation parcel. The Walmart Variation would deviate from the Proposed Route just prior to the crossing of James Madison Highway (U.S. 15), proceeding behind several stores in Haymarket Village Center, primarily Kohl's and Walmart. The variation would generally follow the property line between the shopping center and VDOT ROW for 0.4 miles and would generally follow the western edge of the shopping center property south for 0.1 miles, with a 0.1 mile segment extending west before crossing John Marshall Highway (SR 55) and entering the proposed substation. By traversing the rear and west edges of the shopping center, the transmission line would be less visible to local traffic.

Carver Road Alternative Route

The alternative extends from the Haymarket Junction for 6.7 miles and terminates at the proposed Haymarket Substation. From Haymarket Junction, the route travels northwest for about 0.3 mile, crossing I-66, before heading in a westerly direction for another 1.7 miles paralleling the north side of I-66 utilizing VDOT ROW to the extent feasible. The segment crosses multiple on/off ramps of the interstate, University Boulevard and Lee Highway (U.S. 29), same path as the proposed route for the first 2.08 miles. The route then heads southwest for about 0.5 mile crossing I-66 and generally paralleling the north side of Lee Highway. After crossing Daves Store Lane the route follows the northern side of Daves Store Lane for 0.2 mile and then crosses Daves Store Lane a second time. The route then continues northwest for 0.2 mile crossing Daves Store Lane and John Marshall Highway (SR 55) utilizing VDOT ROW to the extent feasible. From here, the route heads southwest for about 0.2 mile before heading northwest along the Norfolk Southern Railroad tracks for about 0.1 mile. The route then crosses the tracks and continues in a southwest direction for about 0.7 mile crossing Yountville Drive and Somerset Crossing Drive. The route then travels southwest for about 0.3 mile, crossing Carver Road and then heading in a general northwest direction for 0.5 mile before crossing Old Carolina Road. From here, the route generally continues northwest for 0.6 mile passing through forested areas surrounding residences and crossing Haymarket Drive. The route then heads northeast for 0.2 mile before turning west for another 0.2 mile. The route then follows the eastern side of James Madison Highway (U.S. 15) for 0.1 mile, crosses James Madison Highway (U.S. 15), and heads southwest for approximately 0.3 mile before heading northeast for about 0.2 mile and terminates into the proposed Haymarket Substation.

Madison Alternative Route

The alternative extends from the Haymarket Junction for 8.2 miles and terminates at the proposed Haymarket Substation. From Haymarket Junction,

the route follows the same path as the Carver Road Alternative Route for 4.7 miles to a point on the south side of Carver Road before crossing Old Carolina Road. At this point, the Carver Road Alternative Route heads northwest to follow Carver Road, while the Madison Alternative Route deviates from the Carver Road Alternative Route and heads southwest for about 1.6 miles. This segment of the route crosses Old Carolina Road and Thoroughfare Road. The route then crosses James Madison Highway (U.S. 15) and continues northeast for 0.7 mile following the west side of the highway and crossing Thoroughfare Road, Hokie Place, and Market Ridge Boulevard. Continuing northeast the route then crosses James Madison Highway (U.S. 15) and follows the eastern side of the highway for about 0.5 mile before meeting back with the Carver Road Alternative Route just south of North Fork Broad Run. The route then follows the same path as the Carver Road Alternative Route for the remaining 0.6 mile and terminates at the proposed Haymarket Substation.

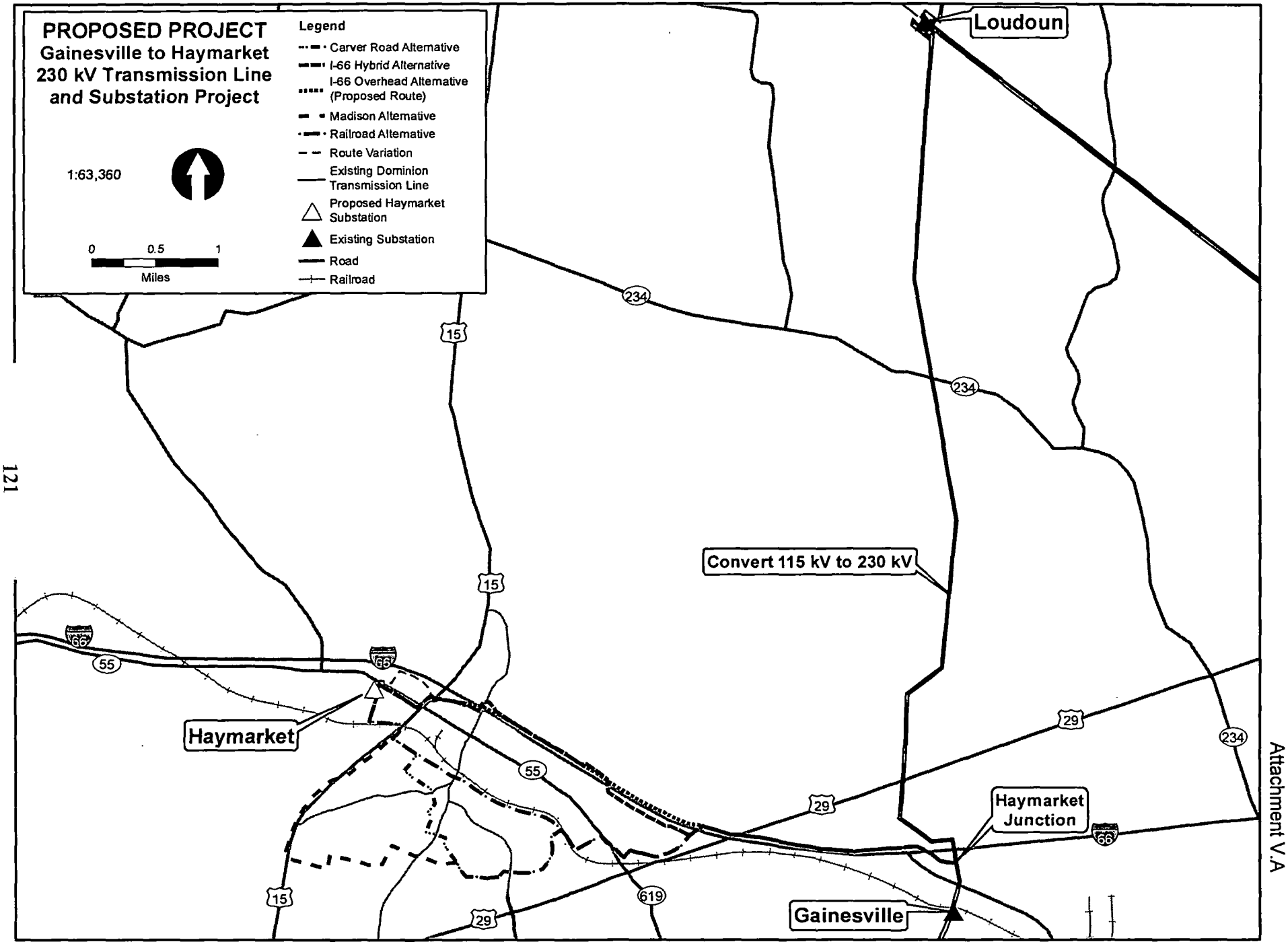
I-66 Hybrid Alternative Route

The alternative extends from the Haymarket Junction for 5.3 miles through Prince William and the Town of Haymarket and terminates at the proposed Haymarket Substation. The hybrid route would utilize both overhead and underground transmission facilities. From Haymarket Junction, the route follows the same path as the Proposed Alternative Route for 2.1 miles until it reaches the transition station, where an overhead to underground transition would occur. The transition station is proposed to be located on the west side of the intersection of I-66 and Lee Highway (U.S. 29). At this point the I-66 Hybrid Alternative Route (underground segment) is offset by approximately 25' from the proposed sound wall along the I-66 corridor, heads northwest and continues along the southern side of I-66 for 0.7 miles, utilizing VDOT ROW to the extent feasible. After crossing Catharpin Road (SR 676), the route continues northwest, crossing I-66, for approximately 1.2 miles following the northern side of I-66. The route then crosses I-66 and then follows the southern side of I-66 and associated eastbound on-ramp for about 0.3 mile. After crossing James Madison Highway (U.S. 15) the route follows the western side of the highway for about 0.1 mile, crosses John Marshall Highway, and then continues northwest on the south side of John Marshall Highway for approximately 0.3 mile before heading south and terminating at the proposed Haymarket Substation.

Railroad Alternative

The alternative extends from the Haymarket Junction for 5.7 miles through Prince William and Town of Haymarket and terminates at the proposed Haymarket Substation. From Haymarket Junction, the route follows the Carver Road Alternative Route for the first 3.5 miles to a point west of the John Marshall Highway and Norfolk Southern Railroad crossings. The route then follows the southern side of the railroad and the northern side of North Fork Broad Run for 1.0 mile. This segment of the route passes through the

Town of Haymarket. After crossing Jefferson Street (SR 625) the route crosses North Fork Broad Run and continues on the south side of the stream for 0.3 mile before the route meets up with the Carver Road Alternative Route and follows it for the remaining 0.8 mile into the proposed Haymarket Substation.



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Attachment V.A

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V. NOTICE

B. List Company offices at which members of the public may inspect the application.

Response: The Application is available at the following locations:

Dominion Virginia Power
OJRP 12th Floor
701 E. Cary Street
Richmond, Virginia 23219
Attn: Diana T. Faison

Dominion Virginia Power
Lincoln Park 2
3072 Centerville Road
Herndon, Virginia 20171
Attn: Timothy J. Sargeant

Loudoun County
Ms. Julie Pastor
Director of Planning
1 Harrison Street, S.E.,
3rd Floor, Mail Stop # 62
Leesburg, Virginia 20175

Mr. Ron Stouffer
U.S. Army Corps of Engineers
Northern Virginia Field Office
18139 Triangle Shopping Plaza, Suite 213
Dumfries, Virginia 22026

Mr. Keith Tignor
Endangered Species Coordinator
Virginia Department of Agriculture and Consumer Services
102 Governor Street
Richmond, Virginia 23219

Loudoun County
Mr. Tim Hemstreet, County Administrator
1 Harrison Street, S.E.
Leesburg, Virginia 20175

Mr. Scott York, Chairman
Loudoun County Government Building
County Administration, 5th Floor
1 East Harrison Street, SE
Leesburg, Virginia 20117

The Honorable Corey Stewart
Chairman
Prince William Board of County Supervisors
1 County Complex Court
Prince William, Virginia 22192

Ms. Melissa Peacor
County Executive-Prince William
1 County Complex Court
Prince William, Virginia 22192

The Honorable David Leake
Mayor-Town of Haymarket
15000 Washington Street, Suite 100
Haymarket, Virginia 20169

Mr. Brian Henshaw
Town Manager-Haymarket
15000 Washington Street, Suite 100
Haymarket, Virginia 20169

Ms. Martha Little (1 electronic copy)
Virginia Outdoors Foundation
Main Street Centre
600 E. Main Street, Suite 402
Richmond, Virginia 23219

Ms. Amy Ewing, (1 electronic copy)
Department of Game and Inland Fisheries
4010 West Broad Street
Richmond, Virginia 23230

Mr. Buck Kline (1 electronic copy)
Virginia Department of Forestry
900 Natural Resources Drive, suite 800
Charlottesville, Virginia 22903